

**Wage and Benefit Comparability of
U.S. Postal Service Clerks to the Private Sector**

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Introduction and Executive Summary

Federal law embodied in the Postal Reorganization Act (PRA) states that the U.S. Postal Service shall pay wage and benefit levels comparable to those paid in the private sector:

“It shall be the policy of the Postal Service to maintain compensation and benefits for all officers and employees on a standard of comparability to the compensation and benefits paid for comparable levels of work in the private sector of the economy.”¹

This mandate for “compensation and benefits” is a logical consequence of the fundamental purpose of economic regulation: protecting the public interest in the provision of efficient services at competitive prices in certain critical industries. Typically, regulated firms have operated in markets where economies-of-scale are important and thus one firm can operate with lower costs than many smaller ones. The regulated firm is given a monopoly franchise, which enables it to realize the economies-of-scale, while the regulatory process forces it to set prices at competitive levels. The regulated firm would thus earn the competitive rather than a monopoly return.

This regulatory system, including the need to create a competitive cost environment, is shared by the Postal Service. The mail delivery system has extensive economies-of-density in the delivery system. In addition, like many regulated firms, the Postal Service has the mandated mission of providing universal mail service, which to date has been provided at common nationwide prices.

Compared to other regulated industries, the Postal Service is unusual in being labor intensive rather than capital intensive. This makes labor costs a dominating issue. For the Postal Service, controlling costs turns on paying competitive compensation (including wages and benefits). This means paying compensation equal to that paid in the private sector for comparable work. The payment of a noncompetitive compensation premium dissipates the potential benefits of economies-of-density in the delivery function, and causes the universal price to be artificially high.

1. Postal Reorganization Act, 39 U.S.C. §1003.

The PRA mandate on comparability should be understood in this context. The goal of the comparability mandate is to force the Postal Service to operate as if it were in a competitive market, thus protecting the interests of postal consumers and insuring universal service at cost efficient prices.

This report investigates the issue of wage and benefit comparability for Postal Service craft employees in general, and postal clerks in particular, as compared to workers employed in private sector firms.

We examine trends in the growth of postal wages compared to the private sector and analyze the current comparability of postal wages relative to the private sector. Based on a thorough statistical analysis of the data, we conclude that while the contract awards of past interest arbitration panels have moderated the growth of postal wages relative to the private sector, postal benefit increases have offset most of this moderation. Consequently, a substantial 33.7 percent premium still exists between private sector and Postal Service clerks' salaries and benefits. This total compensation discrepancy or premium is composed of two parts: a wage premium and a benefits premium.

CPS Postal Wage Premium

The wage component of the total premium is estimated from the Current Population Survey (CPS) of the Bureau of the Census. This survey is the basic household survey of the United States. Using random sampling techniques, the CPS collects a complete set of labor market information on approximately 85,000 full-time, nonagricultural wage and salary workers annually. The methodology used to estimate the premium -- multivariate statistical analysis -- is the generally accepted method for estimating wage differentials. Using CPS data for 2000, we find that the postal wage premium is 21.2 percent (the percent difference is reported in log points times 100, which provides a percentage figure between a private sector and postal base).² Based on an average annual wage for postal clerk craft employees of \$37,582, this translates into a per annum wage premium of \$7,180. This type of

2. Wages of comparable private sector workers are 19.1 percent less than the wages of postal workers or, identically, wages for postal workers are 23.6 percent higher than private sector wages.

CPS data analysis formed the basis of postal premium estimates presented to the Kerr, Mittenthal, Valtin, Stark, Clarke, and Fleischli interest arbitration panels.

Wage Premiums Using the CPS-DOT, O*NET, and New Hire Survey

In reports to the 1995 Stark and Clarke interest arbitration panels, we extended the CPS wage comparability analysis to include additional variables from the Dictionary of Occupational Titles (DOT) that measure the skill requirements and working conditions associated with specific occupations. The DOT variables are good complements to the CPS because the data are based on evaluations of the job and the job requirements rather than the individual worker who fills the job, as is true of the CPS. Similarly, the greater the number of data sets that yield comparable conclusions, the higher is the confidence level that the basic conclusions are correct. Finally, the DOT database enables us to estimate separate postal wage premiums for postal clerks, since the DOT designates job skill and working condition evaluations for postal clerk jobs.

Including DOT skill and working condition variables in our analysis yields a higher estimate of the postal wage premium. As compared to the CPS-only wage premium of 21.2 percent, the wage premium for postal craft workers is 33.9 percent when DOT variables are added to the CPS. In earlier interest arbitration proceedings, the CPS-only results were criticized by the unions because they were based on worker characteristics and did not factor in skill and working conditions specific to postal jobs. The additional variables show that postal jobs require less skill than the average private sector job, while working conditions are only slightly more difficult. Consequently, this evidence indicates that the CPS-only estimate *understates* the magnitude of the wage premium.

Based on CPS-DOT data, we find that the wage premium for postal clerks is 35.7 percent, a little above the overall average of 33.9 percent for all bargaining unit workers. From this evidence, we conclude that clerks enjoy a substantial wage premium. Because of the sampling error around any such estimates, we are unable to draw inferences from these data regarding any differences between clerk and carrier wage premiums.

The finding that there is a material wage premium for postal clerks is supported by the results from a survey of new hires into the Postal Service. The New Hire Survey allows us to estimate wage differentials between postal and private sector jobs based on the wage change of workers when they enter the Postal Service. In the CPS cross-sectional approach, we compare postal workers to private sector workers who are comparable in measurable factors such as schooling, experience, and geographic location. In the New Hire Survey *longitudinal* approach, the focus is on the wage increase received by workers when first hired by the Postal Service. In this direct approach, postal workers are compared to themselves in their prior employment. Consequently, this method controls for worker-specific skills that are unmeasured in the CPS.

Based on a sample of postal clerk employees hired during 1999-2000, we compared the starting salary of new hires age 25 and over with their previous full-time salary in the private sector. We find that the New Hire Survey wage gain for clerks is 31.8 percent. The finding of a substantially higher wage premium using longitudinal rather than the cross-sectional CPS-only analysis supports the conclusion that worker skills unmeasured in the CPS tend to be relatively low among postal clerks, as compared to private sector workers.

The New Hire Survey data also provide information on the industries and occupations from which postal workers are drawn. These data identify the labor markets in which the Postal Service competes. Relatively few postal workers had been previously employed in manufacturing and transportation -- high-wage labor markets occasionally cited as a basis for comparison with postal wages. Only about one-third of new hires had been employed in blue-collar occupations. Rather, the representative postal clerk had been previously employed in the service industry, with an occupational designation of clerk or service worker.

A clear conclusion from the CPS-DOT and New Hire Survey analysis is that the skill level of postal jobs and workers is low compared to private sector workers with similar, broadly measured characteristics such as years of education and experience. This evidence speaks to what has been a contentious issue in postal arbitration hearings -- the use of a "union standard" of comparison versus a

mixed union and nonunion private sector standard. The unions have proffered a standard in which the wages of postal workers are compared to unionized private sector workers, treating union status as if it were a transferable skill variable such as schooling. The principal rationale underlying this extraordinary claim is a set of twin assertions. First, it is assumed that higher union wages in the private sector are entirely capturing otherwise unmeasured worker skills so that the union wage premium is essentially zero. Second, it must be assumed that this relationship holds not only for the private sector, but also for the Postal Service. The result of these assumptions is to compare the wages of postal workers only with the wages of unionized workers in the private sector.

These assertions are testable. The size and nature of the union wage advantage have been tested extensively in the academic literature. Evidence from the private sector overwhelmingly rejects the contention that there is no union wage premium for union workers relative to nonunion workers of similar skill. Our evidence from the New Hire Survey and CPS-DOT entirely rejects such a conclusion for Postal Service workers and jobs.

Our methodology does not employ either a union-only standard or a nonunion standard. Instead, we compare postal workers to a mix of union and nonunion workers across all private sector industries, where the mix is calculated using weights based on private sector employment of nonprofessional and nonmanagerial union and nonunion workers. Such a private sector comparison comports closely to the standard of opportunity cost wages and economic efficiency, as well as to the PRA public interest mandate.

New to this report is the use of the Department of Labor's new Occupational Information Network, known as O*NET. The O*NET data dictionary was created within the past several years by job analysts in order to update and expand the DOT into a more comprehensive set of job descriptions. O*NET is described by the DOL as being a comprehensive database system for collecting, organizing, describing and disseminating data on job characteristics and worker attributes. We match the O*NET database to CPS data on individual workers, based on a crosswalk to the 500 occupations in the CPS. Because O*NET has several hundred highly collinear job descriptors for

each occupation (including USPS clerks and carriers), it is inappropriate to apply multivariate statistical analysis as we have done for the CPS-only and CPS-DOT analyses. Instead, our analysis of the O*NET database relies on a simpler and straightforward comparison of postal and private sector jobs with respect to those skill and working condition measures that are most correlated with wages.

The O*NET results are clear-cut and support the existence of a substantial wage premium. Despite a pay advantage when compared to all nonmanagerial and nonprofessional occupations, postal clerks are ranked low (in the bottom third) for most job attributes that characterize high-paying jobs, while ranking high (top third) for very few. As compared to administrative support and clerical jobs, which on average pay substantially less than postal jobs, postal clerks are ranked low along most dimensions associated with high pay and ranked high among few. Compared to those occupations with pay similar to that of postal clerks, the clerk job is ranked as having lower values of virtually all of the O*NET job descriptors associated with high pay. The same holds true when one compares postal jobs to the jobs of nonmanagerial and nonprofessional workers employed in the transportation, communication, and utilities industries.

We provide a related analysis for the 39 O*NET variables that most closely measure job hazards and other working conditions that can be represented as job disamenities. The postal clerk job receives a "high" rating (top third) in only six or seven of these 39 descriptors, as compared to all nonprofessional and nonmanagerial occupations, to similarly paid occupations, and to workers in the transportation, communication, and utility industries. As compared to other administrative support and clerical occupations, which pay considerably less than do postal jobs, the postal clerk job does have somewhat more difficult working conditions. However, none of 39 O*NET working condition variables are highly correlated with pay.

Our analysis using O*NET reinforces previous conclusions based on the DOT and the New Hire Survey. Contrary to the assertion that the CPS wage premium is misleadingly high owing to a failure to account for job-specific skills and working conditions, analyses with the CPS-DOT and O*NET show that after accounting for job characteristics, the postal wage premium exceeds that

obtained based only on the CPS. Likewise, the New Hire Survey analysis shows that postal entrants do not possess unusually high worker-specific skills. Comparability requires similar pay (and benefits) for similar levels of work in the private sector. When wage analysis on individual workers is supplemented by an analysis of job skills and working conditions, a clear implication is that the true postal wage premium is greater than that indicated by the standalone CPS analysis.

Postal Benefits and the Compensation Premium

The Postal Service's benefits are also far in excess of benefits paid in the private sector. Indeed, the Postal Service's benefits premium exceeds the Postal Service's wage premium. This conclusion is based on a comparison of private sector benefits as estimated by the Employment Cost Index of the Bureau of Labor Statistics (BLS) with postal benefits calculated on a basis comparable to that of the BLS. In calculating a benefits premium, two elements are added to the comparison -- nonwage benefits and paid leave. The methodology and data used to estimate the postal total compensation premium are largely the same as presented before the Mittenthal, Valtin, Stark, Clarke, and Fleischli interest arbitration panels. (The benefit and paid leave data were not available for use at the time of the Kerr Arbitration.) The principle difference between this study and the earlier studies is that our current study uses the current data sets.

Postal clerk nonwage benefits, which include retirement or pension and insurance programs (such as health insurance), are significantly above private sector nonwage benefits as a percent of salary. Pension and insurance benefits cost the Postal Service \$11,533 for a typical clerk earning \$37,582, while private sector benefits cost only \$6,508 per worker (based on the private sector wage base of \$30,403 for a similar worker).³ Adding paid leave further increases the cost of the premium to the Postal Service. Although paid leave is not extra cash for postal workers, it is paid vacation and holiday time, and hence it is a benefit to employees and an extra cost to the Postal Service. Given the total work hours required to meet mail volume, paid leave is translated into higher staffing levels and

3. This category includes life and accident insurance. It does not include workers' compensation.

hence higher costs. Adding paid leave yields a “cost to the Postal Service” measure of the compensation premium. Paid leave for postal clerks has an annual benefit cost of \$6,674. For private sector workers, paid leave costs only \$2,919 annually. The large differences in postal clerk and private benefits leads to a benefits-only premium of 65.8 percent, far higher than the 21.2 percent CPS-only bargaining unit wage premium or the 35.7 percent CPS-DOT clerk wage premium.

It is useful to attach the benefit premium to the CPS wage premium to estimate a total compensation premium. To do so for the CPS-only estimate, we assume that the postal clerk wage premium is approximated by the all-bargaining unit premium of 21.2 percent. Adding the clerk benefit premium of 65.8 percent to the CPS-only wage premium results in a clerk premium for total compensation of 33.7 percent. In dollars, the premium means that postal clerks cost \$15,960 per year more than do comparable private sector workers. This dollar differential of \$15,960 measures the discrepancy existing between the Postal Service’s compensation of clerks and compensation in the private sector – the “compensation and benefits” standard of the PRA. As emphasized in the report, the CPS-only wage premium understates the true premium. When we add nonwage benefits to our CPS-DOT clerk wage premium base of 35.7 percent, we obtain a total compensation premium of 48.2 percent.

Postal Quit Rates and Application Queues

Up to this point in our report, evaluation of the postal premium has been based on direct evidence on wages and compensation for postal and private sector workers. We have found that postal workers receive a substantial compensation premium relative to similar private sector workers employed in jobs with similar characteristics, and that new hires receive large wage gains upon entering postal employment. Moreover, job security from a low risk of layoff is an important job attribute valued by workers, but not accounted for in our premium analysis.

If we are correct that a large premium exists, two implications follow. First, postal workers should have relatively low quit rates. Second, the Postal Service should find it easy to hire qualified

workers to fill job vacancies. In addition, if both of these factors can be shown, then the converse is also true unusually low quit rates and long employment queues imply the existence of a compensation premium.

Quit rate and employment register data further support the conclusion that there exists a large postal clerk wage premium. Quit rates are amazingly low for Postal Service clerks. Among all clerks, the FY 2000 quit rate was only 1.9 quits per hundred workers per year, a weighted average of a 1.2 percent rate for full-time clerks and a 5.0 percent rate for part-time flexibles.

All other factors being the same, dissatisfied workers quit their jobs. The low clerk quit rate in FY 2000 is particularly striking given the strength of the labor markets from which the Postal Service hired at that time. Similarly, employment register data showing a large applicant queue confirm the attractiveness of postal jobs, even in high wage metropolitan labor markets. Indeed, the size of the applicant queue is limited primarily by whether the local employment register is now or has recently been open to general applications from the public. Most registers do not open during the year and among those that do open, most open for only a single time period.

Tracking Moderate Restraint

The CPS, New Hire Survey, and quit rate research formed the basis of our postal premium estimates presented in the APWU/NALC Joint Bargaining Committee interest arbitration before the Kerr Arbitration Panel in 1984. In addition, we traced the buildup of a substantial wage premium in the period from the PRA through 1981, when postal wage increases were in excess of those received in the private sector of the economy. This analysis was updated and expanded to include the estimation of the postal wage premium including nonwage benefits in the presentation before the Mittenthal Arbitration Panel in 1991. This same analysis, again updated, was also put forward in the 1993 health benefits arbitration proceedings before Chairman Valtin, in the 1995 interest arbitration proceedings before Chairman Stark and Chairman Clarke, and in the 1999 NALC proceedings before Chairman Fleischli.

Based on their analysis of the evidence in 1984, the Kerr arbitration panel found that "discrepancies in comparability" existed and indicated that their award was intended to reduce the pay discrepancies that had arisen since the PRA by one percentage point per year over the life of the 1984-87 contract. Chairman Kerr characterized this intended rate of closing of the gap as "moderate restraint," and went on to comment that since the premium "did not develop over-night. . . it would be a mistake to try to correct [it] too hastily." In looking ahead, Chairman Kerr stated that a three-year closing of the premium at one percentage point per year "does not dispose of the problem. Moderate restraint may also be necessary in future years to approximate the guideline of comparability."⁴

The Mittenthal interest arbitration panel reached the same conclusion in 1991: "Notwithstanding the efforts of the Kerr board to establish a principle of 'moderate wage restraint,' a wage premium still exists. Hence, the need for continued 'moderate restraint' still exists."⁵ The result of the 1990 contract was an increase in postal wages that lagged the growth of private sector wages, falling just short of Kerr's goal of holding postal wage growth to 1 percent less than wages in the private sector.

In 1995, after reviewing evidence put before him in the NALC interest arbitration proceedings, Chairman Stark acknowledged the need for continued moderate restraint: "In reaching the conclusions set forth here, I have recognized the need, particularly in light of automatic grade, step, and COLA increases, for wage increases even more modest than those contained in the award of the Mittenthal Board."⁶

In the APWU interest arbitration award, Chairman Clarke accepted the Stark pattern and also reduced the night shift differential. In the NPMHU interest arbitration proceedings, the Postal

4. Clark Kerr, Chairman, "Opinion and Award," Arbitration Proceedings, United States Postal Service and National Association of Letter Carriers, AFL-CIO, and American Postal Workers Union, AFL-CIO. December 24, 1984.

5. Richard Mittenthal, Chairman, "Opinion and Award," Arbitration Proceedings, United States Postal Service and NALC, AFL-CIO, and APWU, AFL-CIO, June 12, 1991, pp. 16,18.

6. Arthur Stark, Chairman, "Opinion of the Chairman," Interest Arbitration Proceedings, United States Postal Service and NALC, AFL-CIO, Aug. 19, 1995, p. 38.

Service presented an overview of the wage comparability findings by arbitrators since Clark Kerr, and Chairman Vaughn concluded: "I am persuaded by the evidence presented by the Postal Service that its NPMHU-represented employees continue to enjoy a wage premium compared to their counterparts in the private sector ..."⁷ The contract award of the Vaughn interest arbitration panel included the Stark/Clarke wage provisions.

In 1999, the Fleischli interest arbitration panel awarded an upgrade to carriers, coupled with wage provisions similar to the negotiated APWU contract. The pay upgrade issue was "deemed to be of controlling importance," and he viewed the pay upgrade issue "as involving an internal inequity, not comparability with the private sector."

Tracking the implementation of the Kerr standard of moderate restraint has been a component of our reports since 1991. In so doing, we have utilized the BLS Employment Cost Index (ECI) as a measure of private sector wages and payroll data provided by the Postal Service as a measure of postal wages.

The wages of bargaining unit postal clerks outpaced the private sector during the 1987 and 1998 contracts and lagged the private sector in the 1984, 1990, and 1994 contracts. For the entire period 1984 through 2000, clerks' wages increased at an average annual rate of 2.9 percent, while private sector wages as measured by the ECI increased at an annual rate of 3.6 percent. Thus, since the 1984 Kerr Award the Postal Service has achieved a closing of the wage gap with the private sector of 0.7 percent per year. Part of this closing of the wage gap between postal and private sector workers as measured by the private sector ECI is due to the large wage increases received by private sector professionals and managers over this period. When professional and managerial occupations are removed from the private industry ECI to form the ECIX, the amount of closing of the wage gap for clerks is found to be 0.5 percent per year.

7. M. David Vaughn, Chairman, "Decision," Interest Arbitration Proceedings, United States Postal Service and National Postal Mail Handlers Union, April 24, 1996, p. 7.

Moderate restraint with respect to wages, however, has had little impact on trends in overall postal compensation relative to the private sector. The reason is that postal benefits have grown at a rate exceeding benefit costs in private sector. Moderate restraint with respect to total compensation was achieved during the terms of the Mittenthal, Valtin, and Stark/Clark awards. From 1990:3 through 1998:4, postal clerks' compensation lagged private sector compensation by 1.2 percentage points per year. Over the entire period since the Kerr award, total compensation for postal clerks lagged the ECI by only 0.2 percent per year (0.1 percent when the private sector measure is the ECIX — excluding managers and professionals). Postal benefit cost increases far exceeded private sector benefit cost increases in each of the three main categories—paid leave, health and other insurance plans, and pension.

In short, while there has been some degree of moderate wage restraint, there has not been restraint in benefit growth and, as a result, little closing in what is a large compensation premium.

The Collective Bargaining and Regulatory Context

The principle of moderate restraint has been a critical component not only of Postal Service collective bargaining, but also of collective bargaining in private sector industries. Union employment has declined as a percent of total employment for many years, and has been declining in absolute numbers since the late 1970s. Even in the traditionally heavily unionized sectors, union employment has eroded sharply: from over 40 percent in the early 1970s to just 19 percent today. The result is that unionized firms face stiff competition from nonunion firms in almost all sectors of the United States economy.

Empirical academic research finds a linkage between union wage premiums and employment. Private sector industries with the sharpest decline in union employment have been the industries with the largest increase in the union wage premium. Unionized firms have had significantly lower profitability than nonunion firms and lower rates of R&D expenditure, new capital investments, and employment growth.

In today's private sector, only 9 percent of wage and salary workers are union members. This percentage, and even the absolute number of union jobs, is likely to decline further over the next several years. The reason is that the normal functioning of the economy leads to high levels of job losses in both the union and nonunion sectors. In order for union membership to be maintained in percentage or absolute size, unions must be able to organize many new workers. Over the recent past, union organizing of workers and establishments in the private sector has not been sufficient to maintain either membership or density.

Partly as a response to these factors, union wage increases as measured by the ECI have moderated relative to nonunion wages since 1983. In most years since 1983, union wage increases have lagged behind nonunion wage increases. Even so, union wage premiums in the private sector remain high. If further union job losses are to be avoided, moderate restraint will have to continue in the unionized private sector.

To date, unionized postal workers have escaped the declining employment and considerable risk from displacement being experienced by workers in many private sector industries. The major reason is that the Postal Service remains highly regulated and free entry by competitive firms into core postal markets is not permitted. That regulation can be used as a protection against competitive outcomes stands in conflict with the broad public policy goals of economic regulation. The goal of the comparability mandate is to force the Postal Service to operate as if it were in a competitive product market, thus protecting the interests of postal consumers and insuring universal mail service at cost efficient prices. The goal is not to provide protection for noncompetitive postal prices and wages. To date, however, the PRA has not achieved comparability, thus thwarting the public purpose of regulation.

Product Market Competition and Regulatory Issues

As of today the Postal Service appears to have been spared the product market erosion suffered by unionized private sector firms that pay high wage and benefit premiums. The question is

whether this is likely to continue? A brief account of past trends in postal employment is a useful starting point.

At the time of the passage of the PRA in 1970, total postal employment stood at 741,216. In 1977, it was 655,097, a loss of 86,000 jobs. Over this period, which was the time of the buildup of the union wage premium in the private sector and in the Postal Service, postal employment was looking very much like union employment in the private sector. The FY 1977 was the low point and, in fact, FY 1999 is the high point, with postal employment now above the level of 1970.

The peak employment level of FY 1999 may not be surpassed for some time. There have already been slight declines in employment in both FY 2000 and FY 2001. And based on the rate increases and cost containment built into the R 2001-1 rate case filing, postal employment should continue to decline for another two years. Is the decline between FY 1999 and the forecast for FY 2003 a minor perturbation or the beginning of another material decline in postal jobs?

The key to answering this question is postal volume. Not surprisingly, when postal volume is increasing strongly, postal employment is growing and when postal volume is stagnant postal employment tends to decline. To answer this question we divide the time since the PRA into three very distinct periods, FY 1970 to 1977, FY 1977 to 1990, and FY 1990 to 2001. What emerges from our tale of three periods is an intriguing story with important implications for the future, including the question as to whether a fourth period is already underway.

The first period, FY 1970 to FY 1977 was a period of declining postal employment. During these years volume grew at a very sluggish rate of 1.0 percent per year. A sluggish economy was part of the story, plus there was a severe recession at the time of the first oil price shock in 1973-74. There were also major downturns in both 1980 and then again in 1981-82, and these were periods of solid volume growth. The key to the sluggish growth was that the real effective First-Class postal price increased by approximately 50 percent over this period. Part of this increase was due to the end of postal subsidies after postal reorganization. But the early to mid-1970s was also the period of the buildup of union wage premiums across the economy and in the Postal Service.

Adding to the problem is that industries with economies-of-scale or density suffer in the face of stagnant volume growth. The Postal Service's financial and employment health is sensitive to whether mail volume is growing more rapidly than the number of delivery points. The result is a reinforcing cycle. If volume increases faster than the growth of delivery points, more mail is delivered at each delivery point and the economies-of-density work to lower the cost per unit of mail. As the cost of mail delivery declines, the Postal Service can delay postal price increases and allow the real cost of mail, that is, mail costs after inflation, to decline. This in turn generates a new increase in mail volume, setting off another round of increases of economies-of-density.

The reinforcing cycle can either be beneficial when mail volume is increasing or detrimental when mail volume is declining. In the 1970s, the cycle was detrimental. Higher wages meant higher prices. Higher prices meant lower volume per delivery point. Lower volume meant an unraveling of economies-of-density, further aggravating the pressure on postal prices. Volume per delivery point fell 8.6 percent between 1971 and 1977.

The second period, the period of rapid volume increases, begins during the stagflation of the 1970s, rockets through the recessions of 1980 and 1981-82, generates double-digit volume growth in the mid-1980s, before leveling off at extraordinary growth rates of over 4 percent per year. During this extended period of FY 1977 to FY 1990, postal volume growth averaged 5.1 percent per year. What changed? First, the postal premium stopped increasing and then actually started to decrease. The Kerr arbitration award institutionalized the notion of moderate restraint, which put a lid on future changes in the premium. Second, the Postal Service then, as now, was being affected by a critical change in technology. The boom in direct advertising and mass mailing constitutes what we call the first mail computer revolution. This, in turn, was associated with the introduction of the worksharing program, which enabled mailers to presort their own mail in return for various discounts depending on what type of sorting they performed.

All the pieces were in place for a beneficial, reinforcing cycle. With volume growth averaging 5 percent per year over the 1977 to 1990 period, enormous economies-of-density were

generated. Postal volume per delivery point increased by 49.3 percent between 1977 and 1990. As a consequence, effective real postage rates declined, new postal jobs were created and employment reached record levels.

Our third period, 1990 through the current date, is the period analyzed intensively by Peter Bernstein. The 1990s, like the 1980s, was a period of strong economic growth. By the end of the 1990s, as the Internet boom hit the economy, economic growth was stronger and inflation and unemployment lower than at any time during the 1980s. Even so, mail volume growth fell sharply, from 5.1 percent per year in our second period to 2.2 percent per year in the period beginning with 1990.

The major factor for the decline, according to Bernstein, was the development of technological competition. The technology factor switches from a strongly positive factor in what we have called the first computer mail revolution, involving direct mail advertising, to a negative factor in what might be called the second computer mail revolution, involving the development of the Internet as an alternative vehicle for mail delivery. Along with the shift in technology from a positive to a negative factor, the gains from worksharing had largely run their course during the 1990s. A major positive factor for volume growth was the implementation of the Kerr standard of moderate restraint. Between 1990:3 and 1998:4, postal compensation increases trailed private sector compensation increases by slightly over 1 percentage point per year. Partially as a consequence of these favorable contracts, the effective prices of First-Class and Standard mail were close to the low points reached at the end of a rate cycle during the 1980s and 1990s. Similarly, the effective price for Standard mail was roughly where it stood throughout the 1990s. Reinforcing these positive trends was that volume per delivery point increased by 7.8 percent between 1990 and 2001. Although much lower than the 49.3 percent of the 1977 to 1990 period, it was enough to make the reinforcing cycle beneficial during this period.

But what also marks this third period is that all these positive forces were looking increasingly shaky by the end of the period. The compensation premium was once again showing

signs of increasing. The second computer mail revolution, with a much darker side (for postal volume and employment), appeared to be settling in. Gains from presort had largely run their course. Postal employment had declined for two consecutive years with further declines likely. Although effective postage rates were still within their historical range, the Postal Service was generating a large deficit. The result was a large rate filing that would reverse the direction of effective postage rate trends.

Particularly troublesome is that the reinforcing cycle is showing signs of turning from beneficial to detrimental. FY 2001 marked a downturn in volume per delivery point. The likely effect of the current rate case, given the economic outlook, will be further declines in volume per delivery point. Unfortunately, the beneficial cycle in effect since 1977 appears to be turning.

Finally, the stable regulatory environment that was enacted as the PRA in 1991 is showing signs of requiring substantial changes. The problem is that the underlying nature of the Internet challenge facing the Postal Service calls into question the viability of the current regulatory structure. The structure is based on the assumption that there are clear boundaries separating most postal products from nearby products. The cornerstone of the policy is the presumption that there are no close competitive substitutes or alternative delivery systems for the major postal mail products, particularly First-Class mail. Consequently, mail products constitute a natural regulated monopoly with very low elasticities of demand. Given the presumption that effective competition is infeasible, competitors can be kept out of the market with no loss to consumers. The surplus available from increasing economies-of-density can then be used to pay for universal service. Finally, cost increases can be passed along through postage increases without fear of reducing volume and generating a detrimental cycle.

But this regulatory structure also makes it very difficult for the Postal Service to compete in new markets. First, new products, changes in service, and price changes need to grind through a prolonged regulatory approval process in which competitors are allowed to complain about unfair competition. This prevents the type of rapid adjustments required in competitive markets. Second,

regulation creates an environment in which the Postal Service is pushed toward pricing each product at what approaches its fully allocated cost. While perhaps guarding against unfair cross-subsidization of competitive products, it prevents the Postal Service from adopting private sector pricing mechanisms in which products are priced based on relative demand price elasticities rather than on costs.

But the basic premise of the regulatory policy is undercut if an alternate delivery system, entirely outside the reach of regulators, is already emerging in the Internet. Instead of having an effective monopoly franchise, competitors are already in the market with an increasing ability to siphon off volume from some of the most lucrative mail markets. If volume then declines, the economies-of-density begin to unravel, generating higher costs that can be passed on in higher rates only at the cost of further volume losses. Finally, if competition has already arrived in postal markets, attempting to keep the Postal Service from competing effectively in other markets is no longer a credible regulatory strategy.

As a consequence of these untenable tensions in the system, regulatory reform is only a matter of time. The form of any new regulatory reform can be approximated by H.R. 22, the last major legislative postal reform proposal. Once set in motion by H.R. 22-type legislation, the dynamics of increased competition will carve out a path that will drive the deregulation process toward a more open, unregulated market. The stresses in postal markets will be considerable as the deregulation process unfolds. This will be greatly felt in the industrial relations system given the existence of a substantial, noncompetitive compensation premium.

Ultimately, deregulation is likely to be as complete as in telecommunications and transportation. As deregulation unfolds, the Postal Service will find itself competing with private sector firms that provide alternatives to the Postal Service's own processing and mail delivery systems. Many if not most of these firms will be nonunion. Assuming material diversion of First-Class Mail to the Internet, the Postal Service will be forced into a cost reduction mode of operation to

bring its institutional and operating costs into alignment with its revenue. In the end, the rents generated by the regulatory process that pay for the noncompetitive costs will disappear.

This is not intended to be a gloom and doom story. If deregulated, the Postal Service would have a physical end-point delivery system that would be difficult for competitors to match. This system could generate additional volume if the Postal Service were free to compete across a wide array of mail products, introducing new products as opportunities arose. If free to use private sector pricing strategies rather than regulatory ones, the Postal Service could be a formidable competitor.

Accordingly, for the Postal Service to succeed in a more deregulated environment, it will need to have a competitive cost structure. As a consequence, the pressures of deregulation will be to significantly reduce the compensation premium. In addition, to be a viable competitor, the Postal Service will need to have the financial strength necessary to make the required investments in product, automation and other capital projects. Financial strength is a critical advantage in competitive markets. The current deficit and the possibility of further deficits if economies-of-density continue to unravel will be a sharply constraining factor. Changing the way the Postal Service does business, including making adjustments to its financial structure and industrial relations system will take time. However, time is becoming an increasingly scarce commodity.

I. Economic Regulation and the Postal Service

The PRA states that the Postal Service shall pay wages equal to those paid for comparable levels of work in the private sector. This mandate for "compensation and benefits" is a logical consequence of the fundamental purpose of economic regulation: protecting the public interest in the provision of efficient services in certain critical industries.

For firms that historically operated in regulated markets, such as electricity, natural gas, or telecommunications, regulation secured the policy goal of providing consumers with vital services in a cost efficient manner. Typically, regulated firms have operated in markets where economies-of-scale are important. In such markets, one firm could operate with lower costs than many smaller ones. The goal was to realize the cost savings through a monopoly franchise, while forcing the firm to operate as if it were subject to the discipline of the competitive product market.

If left unregulated, a monopoly firm could charge high prices or allow cost inefficiencies. To avoid artificially high profits, a regulatory agency would set product prices on the basis of the firm's costs plus a competitive return on capital. The regulated firm would thus earn the competitive rather than a monopoly return.

But this formula created problems on the cost side. Where a firm is guaranteed to recover its costs, there are inadequate incentives for making difficult cost-saving decisions. Cost inefficiencies are created and are passed along into prices. Monopoly prices result, but are now caused by noncompetitive costs rather than noncompetitive returns on capital.

This regulatory system, including the need to create a competitive cost environment, is shared by the Postal Service. Although the presence of economies-of-scale in postal operations is a subject of some debate, there are economies-of-density in the delivery system. In addition, the Postal Service has the mandated mission of providing universal mail service, which to date has been provided at common nationwide prices.

Compared to other regulated industries, the Postal Service is unusual in being labor intensive rather than capital intensive. This makes labor costs a dominating issue. For the Postal Service, controlling costs turns on paying competitive compensation (including wages and benefits). This means paying compensation equal to that paid in the private sector for comparable work. The payment of a noncompetitive compensation premium dissipates the potential benefits of economies-of-density in the delivery function, and causes the universal price to be artificially high.⁸

The PRA mandate on comparability should be understood in this context. The goal of the comparability mandate is to force the Postal Service to operate as if it were in a competitive market, thus protecting the interests of postal consumers and insuring universal service at cost efficient prices. The goal is not to provide protection for noncompetitive costs. To date, as a consequence of the compensation premium, the public policy goal of a cost efficient Postal Service has not been realized.

The Postal Rate Commission operates under a similar competitive mandate, allocating the coverage of institutional costs across all products rather than allowing them to be loaded into those products with the greatest monopoly pricing power. The unregulated monopoly that produces both competitive and noncompetitive products will charge the monopoly price for noncompetitive products and then use the surplus generated by these products to subsidize its competitive products. Cross-subsidization, by stifling competition in competitive products, does not serve the public interest. For the regulated monopoly, where regulation is working properly, cross-subsidization is not permitted.

The now two-decade trend toward deregulation, which is truly international in scope, was generated in part by the realization that old-style economic regulation had failed and that opening industries to competition improves the efficiency and productivity of the economy. The timing of deregulation was also due to improvements in technology and in the financial system that made a

8. For an analysis of regulation when a firm's major costs are labor costs, see Michael L. Wachter, Barry T. Hirsch, and James W. Gillula, "Difficulties of Deregulation When Wage Costs are the Major Cost," in Michael A. Crew and Paul R. Kleindorfer, eds. *Future Directions in Postal Reform* (Boston: Kluwer Academic Publishers, 2001).

competitive environment more likely to take root. Most previously regulated industries in the United States have now been entirely or partially deregulated.

The Postal Service is now being affected by the deregulatory trend because of important changes in technology that are altering the old boundaries among regulated and competitive mail sectors. In particular, the Internet has emerged as an alternative platform for the delivery of messages and for bill presentment and payment. To be successful, the Postal Service will need regulatory reform that allows it to more quickly adjust prices, introduce new products and technologies and to retire or redesign old ones. Product or cost-saving innovations will be required in order to compensate for the likely loss of First-Class Mail volume. A nearly unavoidable weakness of traditional regulation, including the regulation affecting the Postal Service, is that it either slows or prevents the Postal Service from changing methods of production or from quickly redesigning products, service, and pricing in response to changing market conditions.

Regulatory reform, however, will also open postal markets to entry by competitive firms. This will have the inevitable result of raising the price responsiveness of postal products. As will be discussed in the last section, regulatory reform will also force the Postal Service to more fully equalize the institutional cost contribution across products. Wage premiums that were sustainable in monopoly markets would now be loaded into competitive products making it difficult for the Postal Service to compete in critical new markets. In this environment, the goal of competitive costs will be critical to the success of the Postal Service.

II. The Postal Service Wage Premium

In evaluating the Postal Service's compensation premium, we use a number of data sets and methodologies in order to present a comprehensive evaluation of the topic. In this section, we focus on the study of wage differences between postal workers and comparable private sector workers. In a subsequent section we move from a study of wages to one of overall compensation, in order to determine whether or not the Postal Service is adhering to the "compensation and benefits" standard of the PRA.

A. Background

We estimate the Postal Service's relative wage position from the 2000 Current Population Survey (CPS) random sample of the overall U.S. population, conducted by the Bureau of the Census. The results of the CPS study show that the Postal Service wages are far in excess of wages paid in the private sector. The CPS data analysis formed the basis of the postal premium estimates presented to the Kerr, Mittenthal, Valtin, Stark, Clarke, and Fleischli interest arbitration panels.

The CPS is the basic household survey of the United States. It is conducted monthly on a sample of about 50,000 households. Households are randomly selected by the Census Bureau primarily on the basis of area of residence so that accurate estimates of employment and the labor force can be obtained. The data collected from the CPS form the basis for government statistics on, among other things, unemployment rates, union membership and coverage, and weekly earnings. The CPS has been used in numerous scholarly studies in the social sciences, on such topics as wage determination, the economic returns to education, regional wage and employment differences, relative wages among alternative occupation and industry groups, and the effect of unions on wages.⁹

9. During the period 1990-94, we found that 15 percent of all empirical articles in the four leading labor economics journals used the CPS. This figure was reported in Michael L. Wachter, Barry T. Hirsch, and James W. Gillula, *The Comparability of U.S. Postal Service Wages and Benefits to the Private Sector: Evidence From the Total Compensation Premium, New Hire Wage Increases, Quit Rates, and Application Rates*, Report prepared for the U.S. Postal Service. Washington, D.C.: July 10 and August 14, 1995.

B. Methodology

The methodology used to estimate the postal premium from the CPS database is multivariate statistical analysis. There are numerous academic studies of industry and occupational wage differentials and multivariate statistical analysis is the method used in the great majority of these studies. Moreover, the CPS data set is the database most widely used in these studies. The CPS is well suited for an analysis of the relative compensation of U.S. Postal Service workers, since the CPS contains a unique industry code for Postal Service employees and unique occupation codes for Postal Service carriers and Postal Service clerks. By contrast, use of the CPS is limited in private sector interest arbitration because the employees of specific private firms cannot be identified.

To explain the meaning of the wage comparison, a nontechnical illustration of the premium is useful. Suppose workers who were otherwise identical in age, years of education, occupational category, region of residence, and city size found jobs in different industries in the U.S. economy. One individual might work in a manufacturing establishment, another in a service sector job, and a third in a post office. What would those individuals in the various private sector industries be paid compared to the postal worker? This is the question that is answered by the multivariate statistical analysis of the CPS data. Multivariate analysis enables one to control for the characteristics of workers such as educational attainment, work experience and occupational status. In addition, data on the workers' region of the country and city size allow one to control for geographical factors.

Using these data we construct a "representative" postal worker in terms of skill and other variables by assigning the worker the mean of each measured characteristic among postal employees. So if the average postal worker has one year of college, the representative worker is effectively compared to private sector workers with one year of college. More precisely, we calculate what our representative or average postal worker would earn in the private sector based on the observed wages of private sector workers with the same mix of characteristics. The wage premium is then measured

as the percentage difference between the postal wage and the predicted private sector wage for the postal worker.¹⁰

Creating a representative or average postal worker is particularly appropriate because postal craft employees are relatively homogeneous in terms of skill-related variables. For example, over 80 percent of craft employees are either high school graduates or have some college training but are not college graduates. Calculating what a representative postal worker would earn in the private sector has considerable appeal since postal workers readily fit into skill and skill-related categories that are broadly represented across the United States economy. Indeed, postal workers are very similar to the average private sector employee, having similar average years of schooling. Postal workers do tend to be older than the average private sector worker, thus having more years of work experience. In addition, postal workers are employed throughout the nation in a geographic pattern that closely matches that of the private sector.

Although the PRA and economic reasoning dictate that the comparison group should be all comparable private sector workers, the postal unions have sought to narrow the comparison solely to unionized workers in the private sector.¹¹ Their analysis includes a union variable coded as one for both postal and private sector union members and zero for postal and private sector nonunion workers. This approach results in a comparison of bargaining unit postal workers to the small

10. The premium methodology works in the following way: The wage regression provides the regression coefficients, in effect labor market "prices" (in log points) for worker and industry characteristics such as education, occupation, labor force experience, and city size. The coefficients are then used to calculate the wage difference between a unionized postal worker and a statistically identical worker in the private sector. This provides a measure of the logarithmic wage differential, the standard measure used in academic studies. The log differential times 100 provides a percentage differential measure that lies between those obtained using a private base and using a postal base. An advantage of this measure is that it is invariant to the choice of a base — the log percentage difference comparing postal to private wages is identical to the percentage difference between private relative to postal wages. Percentage wage and compensation differentials stated in this report represent the log differential of postal and private wages (or compensation). Further detail on calculation of the postal premium is provided in Barry T. Hirsch, Michael L. Wachter, and James W. Gillula, "Postal Service Compensation and the Comparability Standard," Research in Labor Economics, Vol. 18, 1999.

11. Even more narrowly, union economists have adopted an inappropriate standard of comparison consisting of union, white males, employed in large firms. The issues of employer size and race/gender, in addition to union status, have been analyzed thoroughly in our published work, in particular in Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard."

minority of unionized private sector workers, and a relatively small number of nonbargaining unit postal workers to the overwhelming majority of nonunion private sector workers. In short, they treat the union status variable analogously to schooling and other transferable skill variables. The union comparison standard is inappropriate, being inconsistent with the language of the PRA and the criteria of economic efficiency. We have analyzed this issue in some detail in our published work, and include a discussion of the union standard in Chapter V.¹²

The approach adopted in our analysis is to compare bargaining unit postal workers to both union and nonunion private sector workers, based on the proportions of union and nonunion non-professional and non-managerial workers throughout the private sector economy. Not only does this approach correspond closely with the language of the PRA, but it also is likely to mirror the average opportunity cost or alternative private sector compensation that would be received by postal workers were they to work in the private sector. There is simply no basis for assuming that postal workers, if employed in the private sector, would be employed in unionized jobs rather than spread between the union and nonunion sectors based on the current mix of such jobs.

C. Postal Wage Premium Compared to the Private Sector

The most recent Current Population Survey covering a full year is for calendar year 2000. The 2000 CPS Earnings File includes a quarter-sample of each of the 12 monthly samples during calendar year 2000. The quarter samples comprise those individuals in the CPS who are asked questions on usual earnings, hours worked, and union status. Our study is based on approximately 85,000 full-time, non-student, nonagricultural, employed wage and salary workers in 2000 for whom all necessary information is available.

12. The concept of transferable and nontransferable worker and job variables is discussed in Peter D. Linneman and Michael L. Wachter, "The Economics of Federal Compensation," *Industrial Relations*, Winter 1990. A detailed analysis of the union comparison issue is contained in Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard." Also see, Michael L. Wachter, Barry T. Hirsch, and James W. Gillula, "Postal Service Wage Comparability: What is the Appropriate Comparison Group?" *Proceedings of the Industrial Relations Research Association*, Madison, WI: 1997.

Using the methodology described above, the Postal Service is found to pay an overall wage premium of 21.2 percent in calendar year 2000, as seen in Figure 1.¹³ Based on an average hourly wage of postal craft employees in 2000 of \$17.95, the postal worker earned \$37,337 for the year -- \$7,133 more than the otherwise identical worker earned in the private sector.

The 21.2 percent wage premium shown in Figure 1 is lower than the differential one obtains if one does not introduce control variables such as schooling and occupation. Across all jobs reported in the CPS database, there exists a 26.9 percent wage advantage for postal workers relative to private sector workers. That is, the CPS regression estimate of a 21.2 percent postal premium, which takes into account control variables, is smaller than the differential based simply on wages absent controls. The difference between the two estimates is consistent with the fact that postal workers tend to have a set of individual characteristics that are roughly representative of the average U.S. wage and salary worker. The principal difference is that postal workers are several years older than the average private sector worker. The premium of 21.2 percent is an average for similar workers across all private sector industries, including union and nonunion employees. It is also an average across

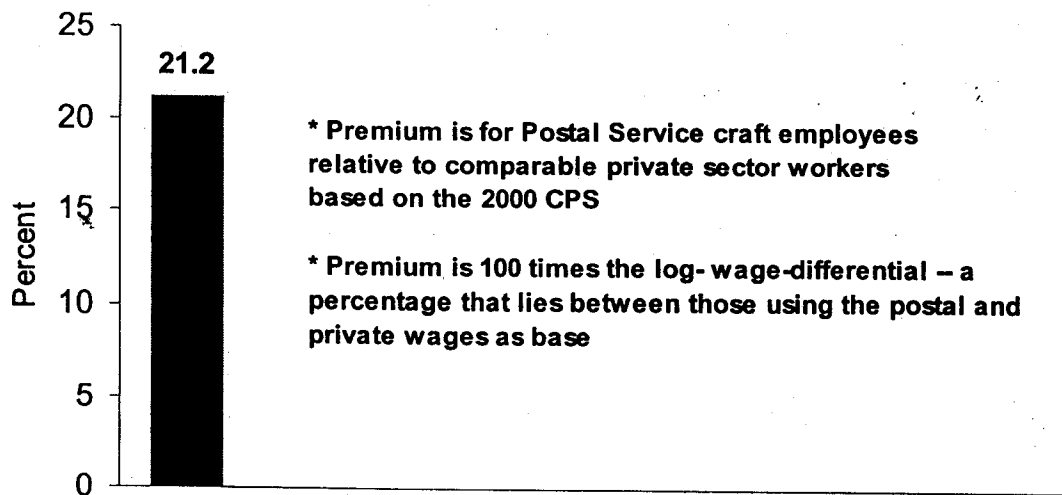
13. The percentage premium is stated in log points times 100, as explained previously. This makes the premium invariant to use of a postal or private base, providing a percentage difference that lies between those using a postal and private base. To fully understand the premium estimate, a few additional issues need to be addressed. First, the regression equations control for the educational level of workers. Postal data records indicate that postal workers have relatively high levels of educational attainment given the nature of the work performed. The median postal worker has graduated from high school and attended college briefly. High wage premiums, however, attract workers who are otherwise overqualified in terms of the job requirements. To the extent postal workers have more schooling than needed, the true postal premium is higher than 21.2 percent.

Second, and a related point, we have made an adjustment to the premium to account for "job tenure," defined as years with the current employer, and work shift. The tenure variable, although not available on the full-year CPS earnings files, is included in a February 2000 CPS supplement for approximately a third of our full-year sample (the outgoing rotation groups in February through May). To reflect the effect of job tenure on the 2000 premium, the postal premium from the 2000 CPS was adjusted downward by the percentage impact of the variable on the premium, calculated using the February-May CPS sample. The premium is also adjusted downward to reflect the higher incidence of evening and night shift work in the Postal Service than in the private sector. Figures on shift work were obtained using the May 1997 CPS Work Schedules Supplement.

Third, the premium discussed above is for bargaining unit employees, excluding casuals, managers, and other nonunion postal employees.

Fourth, our methods of forming variables to be included in the analysis may change as changes in the format and procedures used in the publication of the CPS data are introduced, such as changes in the definition of education variables, topcoding, and the identification of workers with allocated earnings.

Figure 1
Postal Wage Premium: 2000



Notes to Figure 1:

The postal wage premium relative to private sector union workers is computed from regression equations estimated with data from the 2000 Current Population Survey (CPS).

Observations in the database are first screened to retain only those with valid answers for all variables included in the regression analysis. Only employed wage and salary workers 16 years or older in the nonagricultural civilian labor force with valid data for industry, occupation, education, earnings, and hours worked are included.

The analysis is restricted to full-time union workers -- 35 to 60 hours -- to avoid comparing postal workers to part-time private sector workers that might be predominantly in low-wage non-career jobs.

Separate regressions are estimated for each of four race/gender groups, and premiums computed from the four regressions are averaged in order to compute an overall premium, using race/gender shares of the employment of Postal Service craft employees as weights.

A postal premium is computed relative to union and nonunion workers (separately) in each of eight broad industries that make up the private nonfarm sector of the economy. The overall premium relative to private industry is computed as a weighted average of the industry premiums using industry employment weights of nonprofessional, nonmanagerial workers.

The average postal wage premium estimated from the CPS is adjusted to account for the incidence of shift work and earnings among postal workers and in the private sector. The premium is also adjusted to include the effect of job tenure. Information on job tenure is not collected in the regular monthly Current Population Survey, but it is collected in periodic supplements to the CPS, most recently in February 2000. Adjustments for job tenure for use in 2000 were calculated with the February 2000 CPS supplement by comparing the Postal Service premium from a model that included tenure with the premium from a model that excluded tenure. Adjustments for work shift differentials were made based night shift supplements, USPS night work, and the reported frequency of night work in the private sector, calculated from a special May 1997 CPS supplement on work schedules.

different geographical regions, across cities and towns of different sizes, and across various demographic groups.

We do not use the CPS-only database to calculate separate premiums for the different postal crafts. There are several reasons for this. First, the overall premium across all crafts is a statistic that has been introduced in all past postal arbitrations. Secondly, differences between crafts in terms of the measured CPS skill variables are not likely to be meaningful. A major difference between these two crafts is working conditions and the CPS does not include any working condition variables (the exception is shift hours, which are accounted for in the CPS-only premium). Thirdly, any difference in the premium among postal crafts, particularly between clerks and carriers, is relatively small and thus runs into problems of statistical significance.¹⁴ For example, whereas we know with great confidence that a postal premium of 20 percent (or even 10 percent) is significantly different statistically from zero, we cannot be confident about small differences of a few percentage points. Finally, given the financial position of the Postal Service and the underlying changes in the competitiveness of postal product markets, the existence of an overall system premium illustrates most starkly the cost problem faced by the parties.

D. Estimation Issues: Job Tenure and Earnings Imputation

As discussed earlier in this chapter, the monthly CPS does not routinely contain a measure of job tenure (years with one's current employer). In our postal analysis here and in previous reports, we have made an adjustment for tenure based on a smaller CPS sample for which tenure is measured. The same reduction in the postal premium found for the smaller sample is then used to adjust downward the premium estimate. This adjustment is large. Absent the tenure adjustment, the postal premium would have been 28.3 percent, as compared to 21.2 percent with a full adjustment for tenure.

14. The CPS data set used in this study is for the year 2000. The wage adjustment associated with the upgrade of the letter carriers is thus not reflected in the data or premium estimate.

Our adjustment, however, assumes that all differences in tenure reflect productivity differences, that is, that causality runs entirely from high tenure to a high wage. Yet lengthy tenure is in part a reflection of low quit rates resulting from generous compensation. To the extent that tenure is high as a result of high wages, rather than a cause of high productivity and high wages, adjusting for tenure causes the postal premium to be understated. This effect is nontrivial given the low quit rates and concomitant lengthy tenure among postal employees. If instead it were assumed that half of the effect of tenure runs from tenure to wages, while the other half runs from wages to tenure, then the estimated CPS premium would be 24.8 percent rather than 21.2 percent. The former is almost certainly a better measure of the premium than is the latter.¹⁵

Another issue is that a number of individuals surveyed in the CPS do not disclose their earnings (non-response rates on variables other than earnings are quite low). In order to provide published statistics covering the full labor force, the Census Bureau “imputes” or “allocates” earnings for non-respondents. They do this using a “hot-deck” matching procedure in which a nonrespondent is assigned the earnings of a “donor” with an identical set of match characteristics. These match characteristics include such things as age, schooling, gender, broad occupation, and hours worked, but do *not* include industry of employment or union status. The result is that a postal worker who does not report earnings is typically assigned the earnings of a nonunion non-postal employee. This implies that the postal wage premium is biased downward substantially, since over a quarter of postal workers in the full sample are assigned a competitive non-premium wage by the CPS allocation methodology. In the analysis in this report, we have removed this bias by restricting our analysis to

15. Henry Farber provides a lengthy discussion for reasons why tenure variables in a wage regression should not be used to measure the returns to specific human capital (productivity). See Henry S. Farber, “Mobility and Stability: The Dynamics of Job Change in Labor Markets,” in O. Ashenfelter and D. Card (Eds.), Handbook of Labor Economics, Volume 3B, Amsterdam: Elsevier Science, 1999. A recent paper by John Abowd and Changhui Kang analyze this statistical relationship in depth and attempt to reconcile previous empirical estimates. Their favored estimates imply that the causal effect of tenure on wages is well under half of that obtained in a standard wage regression. See John M. Abowd and Changhui Kang, “Simultaneous Determination of Wage Rates and Tenure,” Cornell University, March 2001 (presented at the Econometric Society Meetings, College Park, MD, June 2001).

those workers who report earnings, omitting from the sample all postal and non-postal workers with earnings imputed by the Census Bureau. As expected, highly similar postal wage premiums are obtained when we omit postal allocated earners, but retain private sector workers with allocated earnings.¹⁶ This is because the Census procedure generally does a good job of imputing earnings, but fails to capture wage premiums associated with industry or union status. The fact that postal workers who do not report earnings are assigned donor earnings substantially lower than the earnings among postal workers who report earnings is itself direct evidence of the existence of a substantial postal wage premium.

E. What Needs to be Added? Putting the CPS Analysis in Perspective

The CPS analysis provides a focus exclusively on wages, providing a comparison of bargaining unit postal workers to private sector workers with similar measured characteristics. This approach to measuring wage differentials is standard in the large labor economics literature and is highly informative regarding the relative pay of postal workers. A CPS-only analysis, however, is restricted to the variables in that survey. In subsequent chapters we add other data that are relevant to a study of postal wage comparability.

Although the CPS measures workers' schooling, potential work experience, and other personal characteristics, there can be other unmeasured differences in skills among workers. In addition, the CPS provides little information about job characteristics. Chapters III and IV use two databases from the Department of Labor, the Dictionary of Occupational Titles (DOT) and the Occupational Information Network (O*NET). These databases measure job skill requirements and working conditions in postal and private sector jobs, thereby capturing many unmeasured job-specific characteristics not contained in the CPS-only analysis. In Chapter V we utilize the Postal Service's New Hire Survey, which allows us to compare postal workers' entry wages with the wage those same

16. For an analysis of how wage gap estimates are affected by imputed earnings, see Barry T. Hirsch and Edward J. Schumacher, "Match Bias in Wage Gap Estimates Due to Earnings Imputation," Trinity University, 2001 (presented at the Econometric Society Meetings, College Park, MD, June 2001).

workers earned in the prior private sector job. Such "longitudinal" analysis provides a way to control for unmeasured worker-specific skills since each worker's postal wage is compared to the same worker's wage in the private sector. As mentioned previously, the CPS premium measures wages, but not the dollar value of benefits. Chapter VI compares postal and private sector benefits and calculates the postal compensation premium.

An important factor not included in the CPS analysis is job and income security. In chapter VII, we provide evidence showing that the risk of permanent job loss is substantial in much of the private sector, in sharp contrast to the considerable job security among bargaining unit postal workers. In competitive labor markets, workers are willing to accept lower wages, all else the same, in jobs with a low risk of layoff. Although it is difficult to place a precise value on this job security for workers, the willingness of private sector unions to grant what are often substantial wage concessions when job loss is threatened suggests that job security is highly valued.

III. The Postal Premium and Occupational Skills and Working Conditions

In each of our studies of postal compensation comparability, we have expanded our analysis to incorporate additional data, either when the data first become available or when they became important to the issues involved in the arbitration. In our reports to the Stark interest arbitration panels in 1995, we extended our basic wage comparability analysis to include additional variables on job skill requirements and working conditions from the Dictionary of Occupational Titles (DOT). This analysis addressed concerns that variables contained in the CPS did not adequately measure worker skills or job working conditions.

Our current CPS-DOT results confirm those reported in 1995. First, occupational skill requirements in postal clerk jobs were found to be generally lower than in the average private sector job. Second, working conditions were generally slightly adverse. Finally, the lower skill effect more than offset the working conditions effect. Hence, we concluded that our CPS-only analysis understated the true clerk wage premium.

A. Dictionary of Occupational Titles

The DOT is a reference manual and data source, conducted and published by the Department of Labor. It provides a broad range of information on the content and characteristics of detailed occupations based on assessments by job evaluators. Information provided in the DOT describes the skill requirements and content of jobs or the working conditions and the physical demands of jobs.

Expanding our database to include additional variables offers substantial advantages. Since the CPS is a household survey, it focuses on individual characteristics rather than specific workplace features. The DOT variables are complementary because they are based on observations of workplace features, measuring job characteristics and requirements rather than individual worker characteristics. The inclusion of the DOT variables thus enables us to expand our set of skill and working conditions variables beyond the CPS skill variables such as years of education and

occupation. The expanded CPS-DOT database also assists in developing a separate estimate of the wage premium for postal clerks, since the DOT provides distinct job characteristics by occupation.

The inclusion of additional skill variables can either lower or raise estimates of the premium, depending on the DOT's evaluation of the skill requirements of postal clerks compared to private sector jobs in general and the compensability of these skill measures in the labor market. Generally, the expectation is that the more skilled jobs are the highest paid jobs, a result borne out by the data.

In analyzing working conditions, however, one cannot know a priori whether any given characteristic is attractive or unattractive. Instead, the payoff to any job trait will depend on the interaction of the demand for the job on the part of firms with the supply of individuals. For example, some individuals might prefer outdoor work while others might prefer inside work. If the supply of workers who prefer outside work were large enough to satisfy the demand, there would be no extra payoff to outside work. If relatively few wanted such work, then outdoors jobs would command a pay differential, all else the same. Empirically, the latter appears to be the case, a modest wage differential being associated with outdoors work.¹⁷

Further complicating the impact of working conditions on the wage premium is that working conditions are likely to be correlated with unmeasured skill traits. In particular, high skilled managerial and professional jobs tend to have favorable working conditions while many unskilled, semi-skilled, and skilled production and nonsupervisory jobs do not. Hence, an undesirable job characteristic that pays a compensating differential may well have a negative coefficient if the differential is more than offset by the negative effect of the lower skill. In addition, inclusion of a large number of skill and working condition variables makes it difficult to predict the sign of any single variable owing to a high degree of collinearity among the variables. Note that it is still

17. The classic statement on compensating wage differentials is provided by Adam Smith, An Inquiry Into the Nature and Causes of the Wealth of Nations, Edwin Cannan Edition, New York: the Modern Library, 1937 (original edition, 1776). For a more detailed analysis, see Sherwin Rosen, "The Theory of Equalizing Differences," in The Handbook of Labor Economics, vol. 1, edited by Orley C. Ashenfelter and Richard Layard, Amsterdam: North Holland, 1986.

appropriate to control for these job characteristics since they are capturing wage determinants not otherwise measured and improve the accuracy of the wage premium estimate. But one must use care in interpreting individual coefficients as measures of the "price" of the individual job characteristic. For this reason, we focus on the overall impact of skill and working condition variables.

If postal jobs were to require greater skill or have more adverse working conditions than non-postal jobs, standard CPS-only estimates of the postal/non-postal differential would overstate the true premium. Conversely, if skills are relatively low or working conditions less onerous than jobs elsewhere, then the true postal premium will be larger than indicated by the CPS-only estimates.

B. Description of DOT Data

The DOT skill and working conditions variables are grouped into categories measuring the following occupational skills and working conditions:¹⁸

Training Variables: These include variables measuring a) general educational development, which includes formal and informal education required for occupations in the areas of reasoning, math, and language, and b) training required for specific vocational preparation, measured by the amount of time required to learn the techniques, acquire the information, and develop the facility needed for average performance in a specific job-worker situation.

Worker Function Scales: These measure information, knowledge, and conceptions related to data, people, or things, obtained by observation, investigation, interpretation, visualization, and mental creation.

Aptitude Factors: These measure the level of aptitude required to perform adequately in an occupation. Variables in the DOT measure required verbal, numerical, and spatial aptitudes, form and clerical perceptions, and physical coordination and dexterity.

Physical Demands: These variables include a strength index, and variables measuring whether an occupation demands substantial climbing and/or balancing; stooping, kneeling, crouching, and/or crawling; reaching, handling, fingering, and/or feeling; seeing; and talking and/or hearing.

18. We use the DOT data set and matching process developed by Paula England and Barbara Kilbourne, Occupational Measures from the Dictionary of Occupational Titles for 1980 Census Detailed Occupations, Inter-university Consortium for Political and Social Research, ICPSR #8942, Ann Arbor, MI: Fall 1988. Details are provided in Barry T. Hirsch, Michael L. Wachter, and James W. Gillula, "Postal Service Compensation and the Comparability Standard," Research in Labor Economics, Vol. 18, 1999. A thorough description of the DOT is provided in Ann R. Miller, Donald J. Treiman, Pamela S. Cain, and Patricia A. Roos (eds.), Work, Jobs, and Occupations: A Critical Review of the Dictionary of Occupational Titles (Final Report to the U.S. Department of Labor by the Committee on Occupational Classification and Analysis), Washington: National Academy Press, 1980.

Environmental Conditions: These include variables measuring whether jobs are performed indoors, outdoors, or both; and the presence of non-weather related environmental conditions such as extreme cold, heat, wetness, noise, atmospheric conditions (fumes, noxious odors, etc.), and hazards.

C. Postal Premium and Clerk Premium Estimates with the Inclusion of DOT Variables

For a DOT skill or working condition variable to materially affect the wage premium, two factors need to hold. First, there must be a sizable difference in the means of the variable between postal and private sector workers. In addition, that job characteristic must be associated with a wage advantage or disadvantage (after accounting for other worker and job characteristics).

In fact, the data show that postal jobs require lower levels of training and skill than do private sector occupations, on average. For example, required training time to achieve occupational proficiency is less in postal than in nonpostal jobs. Likewise, DOT aptitude ratings indicate required levels of verbal, numerical, and spatial aptitudes that are lower than the average among private sector occupations. In contrast, the DOT evaluates postal occupations as requiring a higher level of clerical aptitude than nonpostal occupations.

Working conditions fall into two general categories – physical demands and environmental. Based on DOT ratings, postal occupations tend to have moderately more demanding working conditions than average jobs in the private sector. Not all of these working conditions, however, are associated with large wage differences in the labor market, and hence some have relatively little effect on the estimated wage premium.

Our analysis using matched CPS and DOT data indicates that the postal wage premium is larger in the combined CPS and DOT regression than the 21.2 percent wage premium in the standard CPS regression. To illustrate how the job variables work, we first enter the DOT skill-related variables and then follow by adding the DOT working condition variables.

When we include the DOT skill variables, the postal wage premium estimate rises substantially, from 21.2 to 37.7 percent, reflecting the positive impact of job skills on wages and the DOT's assessment that postal crafts require lower levels of skill than the average occupation for

private sector workers. When we then add DOT working condition variables, however, the wage premium is lowered modestly, from 37.7 to 33.9 percent. This change reflects the relatively small labor market rewards associated with most occupational working conditions, coupled with modest differences between postal and non-postal occupations in the overall level of work disamenities. The DOT wage premium of 33.9 percent suggests that the CPS wage premium, absent job skill and working condition variables, understates the magnitude of the postal wage premium.

The CPS-DOT analysis permits us to calculate separate premiums by craft. The DOT wage premium for postal clerks is 35.7 percent – slightly above the overall DOT postal premium of 33.9 percent. To understand how the DOT variables affect the wage premium for clerks relative to other postal crafts, it is helpful to compare how the DOT evaluates postal clerks as compared to carriers. Although the DOT assigns identical or similar values to postal clerks and carriers for many job characteristics, there are some differences. Postal clerk jobs require numerical and clerical aptitudes a little higher than those required for carriers, thus pushing downward the premium estimate for clerks relative to carriers. There are also minor differences between clerks and carriers in required form perception, finger dexterity, and color discrimination, but these characteristics are not systematically associated with wage differences in the labor market.

Among the DOT working condition variables, many are identical for carriers and clerks. The more important exceptions are that carriers are required to work both indoors and outdoors whereas clerks work primarily indoors; the carrier job requires greater strength than does the clerk job; and city mail carriers are rated as being in a hazardous occupation (due largely to a high incidence of dog bites). The CPS-DOT wage analysis indicates a compensating wage differential in the private sector associated with job hazards and working outdoors. Therefore, the effect of accounting for DOT working conditions is to lower the wage premium estimate among postal carriers relative to clerks.

A point worth noting with respect to the clerk premium is the treatment of shift work, an important component of many postal clerk jobs. Working evenings and nights is a job disamenity not measured in the DOT, but which we have already accounted for in the base CPS analysis. Since

weekly earnings measured by the CPS include usual shift pay resulting from working evenings or nights, we made adjustments to our CPS premium estimates to account for differences in work shift between postal and private sector workers. As compared to the private sector labor force, postal clerks are substantially more likely to work night shifts, while the overall postal workforce is somewhat more likely. Thus, the shift adjustment lowers substantially the postal clerk premium while lowering the overall postal premium by a small amount.¹⁹ The DOT premium estimates include the same shift adjustment previously incorporated into the CPS analysis.

D. Conclusions from the CPS-DOT Database

The use of alternative databases provides yet more evidence on the magnitude of the postal and clerk wage premiums. Historically, we have relied on the CPS-only wage premium because it is the original database that allowed an estimate of wage comparability in the Postal Service. Because any single database has limitations, we have added additional comparisons as they have become available. But the weight of the new evidence is that the CPS-only premium understates the true wage premium.

The average job in the private sector has skill requirements greater than those demanded of postal clerks, coupled with working conditions similar to or slightly less onerous than those faced by clerks. Accounting for job skills raises estimates of the postal premium. Postal jobs, including postal clerk jobs, require workers who are skilled, and these workers sometimes face demanding working conditions. But postal jobs are not unique in this respect. Consequently, the net impact of adding measures of job skills and job amenities and disamenities is to increase the estimated wage premiums both for clerks and the overall bargaining unit workforce.

19. The basic methodology for the shift adjustment is described in Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard." Data on the frequency of shift work performed in the private sector were obtained from the May 1997 CPS Work Schedules Supplement, the most recent data available.

IV. The Job Characteristics of Postal and Private Sector Jobs: The O*NET Database

In this section we focus on a new database on occupational characteristics made available by the Department of Labor. This database permits us to compare postal clerk jobs with other occupations throughout the economy. The Occupational Information Network (O*NET) is produced by the U.S. Department of Labor's Employment and Training Administration. The O*NET database or data dictionary was created within the past several years by job analysts based in part on detailed job analyses, many of which were conducted as part of the DOT. In developing the O*NET database, the Department of Labor (DOL) is expanding the DOT concept into a more comprehensive set of job descriptions. O*NET is described by the USDOL as being a comprehensive database system for collecting, organizing, describing and disseminating data on job characteristics and worker attributes.²⁰

A. O*NET Database

The O*NET database contains 259 highly detailed, distinct job descriptors. They fall into a wide range of categories including abilities that influence the acquisition and application of knowledge in problem solving to psychomotor, physical and sensory abilities to social, technical, and complex problem solving skills.²¹

20. O*NET not only offers updated data, but also provides a conceptual framework – referred to as the Content Model – to describe the workplace. As described by the Department of Labor, the Content Model is a skills-based structure that classifies data into various categories measuring worker skill requirements and occupational characteristics. The first public release version of O*NET was O*NET-98, released in late 1998. It includes variables or job descriptors for 1,122 occupations. Recently, O*NET has released a version with data classified using an alternative set of occupational codes. In the future, O*NET plans to update and revise their job descriptors.

21. We reduce the number of O*NET variables from an initial total of 483 to 259 with little loss in information. This primarily involves omitting a large number of "duplicative" O*NET variables measured by two and sometimes three variables with alternative scales. For example, the descriptor "written comprehension" (among many others) is measured both along an "importance" and a "level" scale. A few, such as a descriptor of what's needed to perform a job titled "getting information to do the job" is measured on "importance," "level," and "frequency" scales. These alternative scales are almost perfectly correlated. (We chose to use the "level" measure.) Following omission of these duplicative variables, plus a few variables that represent summary measures of other included variables, the O*NET database is reduced from 483 to 259 variables.

Given the high level of specificity of the job descriptors, a number will have limited relevance to any particular job. For example, “guiding, directing and motivating subordinates” is likely to be relevant for making comparisons among managerial-type, but not postal clerk-type jobs. Some professional occupations may benefit from “knowledge of philosophy and theology,” while many other occupations will not. Other descriptors may appear to be useful for comparing postal clerks to other private sector positions – such as the physical ability “stamina” or the cognitive ability “written comprehension” – but may or may not be useful in explaining pay differentials.

B. Coupling the O*NET with the CPS

To focus our attention on the job descriptors that are pay related, we matched the O*NET database of job descriptors with the CPS database on wages of individuals by occupation. Fortunately, the O*NET variables can be matched to individuals in the Current Population Survey (CPS) by comparing occupation codes. O*NET provides a crosswalk mapping their 1,122 occupation codes to the approximately 500 Census occupational codes used in the CPS. For the most part the crosswalk between O*NET and the CPS is clear-cut, with many O*NET and Census occupations (including postal clerks and carriers) mapping one-to-one. Where more than one O*NET occupation is assigned to a Census occupation, mean values of the O*NET variables were calculated. In a small number of cases where no O*NET occupation mapped directly to the Census, close occupational matches were readily identified.²²

Having matched the O*NET occupational descriptors to individuals in the CPS, we are in a position to determine which job descriptors have a high payoff in explaining wage differentials.²³ To do so, we adopted a three-step process.

22. Overall, the matching process is more direct and far simpler than the complex mapping from the over 12,000 DOT occupations to 500 Census occupations. We match the O*NET database, issued in late 1998, to a large individual worker database that combines the 1998 and 1999 CPS earnings files.

23. One method for doing this would be to estimate a postal wage premium using a combined CPS-O*NET data set, in a fashion analogous to the CPS-DOT. The difficulty of doing so is the sheer number of O*NET descriptors. Although the 259 variables could be included in a regression equation, the high degree of collinearity across these variables would make it impossible to give a meaningful interpretation to individual

In the first step we isolate those job descriptors that are highly correlated with wages and then evaluate the standing of postal clerks in that specific set of job descriptors. As part of the first step, we eliminated the managerial and professional jobs and calculated the mean wage of each of the remaining occupations in the CPS database.²⁴ This gives us a database of 368 occupations with the mean wage rate, employment, and a full set of 259 job descriptors for each occupation.

We then identified those job descriptors that are highly correlated with wages. Many O*NET variables show a strong positive correlation with the wage, while very few show a strong negative correlation. We focus on the 100 job descriptors that were found to have a simple correlation coefficient of .15 or above (56 descriptors have correlations .20 and above). There is nothing magical about a 0.15 correlation cutoff. Other cutoffs could be used and we would see a similar pattern of results.

The 100 job descriptors are listed in Table 1, grouped in the broad set of job descriptor categories in which they are classified. Of these 100 descriptors, 87 are related to skill, knowledge, or job performance requirements, consistent with expectations from economic theory of a causal relationship between skills and wages.

The other 13 job descriptors describe occupational values and interests. Remember that O*NET is used in part as a job placement device. Individuals using the O*NET for career placement would match their skills and knowledge to the requirements of the job. They would also match their own interests and values to those promoted in individual jobs. Hence, the desire for high

coefficients. Even more troubling, some of the individual job descriptors may become highly correlated with other variables in the analysis, rendering those coefficients difficult to interpret as well. A solution would be to make choices among the similar variables, including only one or two from each overlapping group and excluding those that are descriptive of few occupations. The disabling feature of such an approach is that any particular choice of variables could be contested as arbitrary. This was not a problem with the CPS-DOT since fewer than 30 variables were published and all were broadly descriptive of many different occupations. Consequently, we were able to include all of the variables in the published Dictionary of Occupational Titles, without having to select which of these specific variables to include in the regression analysis.

24. In doing so, we restricted the sample of individual workers to full-time private sector wage and salary workers.

compensation and desire for high social status are occupational values that economic theory would suggest are highly correlated with wages, but are not the cause of the high wages.

None of the 100 job descriptors are working condition variables, such as those measuring job hazards or a requirement to walk or run on the job. One explanation for this finding is that adverse working conditions are often part of low-skill jobs. In a simple correlation framework, the negative wage effect of low skill and the potential positive effect of an adverse working condition pull in opposite directions, weakening the simple correlation between working conditions and wages.

Note the impact on the analysis of eliminating the professional and managerial occupations. The job descriptor "guiding, directing and motivating subordinates" is highly correlated with pay across all 500 occupations. But the explanatory power of that variable comes largely from capturing the difference between managerial and nonsupervisory occupations with respect to that trait. Among the 368 nonprofessional and nonmanagerial occupations in our remaining database, "guiding, directing, and motivating subordinates" has a very low correlation with pay. On the other hand, a variable such as "written expression" is highly correlated with pay not only across all 500 occupations, but also within the 368 nonmanagerial and nonprofessional occupations of interest to us. Finally, "stamina" is an example of an O*NET descriptor that is uncorrelated with pay across both the 500 occupations and the 368 occupations.

It is also noteworthy that a number of interest and value traits are among the most highly correlated with wages. The highest correlation is for the descriptor measuring the extent to which the "job satisfies the value" or need for "compensation." Obviously, individuals whose job satisfies their need for compensation are more likely to be employed in high wage jobs. Similarly, individuals who want jobs that "utilize their ability" will likely end up in high skill jobs. Such jobs are also likely to pay high wages as a consequence of their high skill.

The "compensation" and "ability utilization" variables are interesting to compare in terms of the implications for our analysis. High "compensation" as a value will almost always be matched

**Table 1: O*NET Content Model Descriptors:
Correlation Coefficients and Clerk Rank for 100 O*NET Descriptors
Most Highly Correlated with Wages**

Variable I.D.	Descriptor Name	Wage Correlation	Clerk Rank
A-I.A.1. Cognitive Abilities			
Abilities that influence the acquisition and application of knowledge in problem solving.			
1. A01LV00M	Oral Comprehension	0.166	M
2. A02LV00M	Written Comprehension	0.235	M
3. A03LV00M	Oral Expression	0.159	M
4. A04LV00M	Written Expression	0.183	L
5. A05LV00M	Fluency of Ideas	0.223	L
6. A06LV00M	Originality	0.201	L
7. A07LV00M	Problem Sensitivity	0.210	L
8. A08LV00M	Deductive Reasoning	0.275	L
9. A09LV00M	Inductive Reasoning	0.255	L
10. A12LV00M	Mathematical Reasoning	0.199	L
11. A13LV00M	Number Facility	0.179	M
12. A15LV00M	Speed of Closure	0.172	L
G-IV.A.1. Information Input			
Where and how are the information and data gained that are needed to perform this job?			
13. G01LV00M	Getting Information Needed to do the Job	0.274	L
14. G02LV00M	Identifying Objects, Actions, and Events	0.235	L
15. G03LV00M	Monitor Processes, Material, Surroundings	0.188	L
16. G04LV00M	Inspecting Equipment, Structures, Material	0.169	L
17. G05LV00M	Estimating Needed Characteristics	0.246	L
G-IV.A.2. Mental Processes			
What processing, planning, problem-solving, decision-making, and innovating activities are performed with job-relevant information?			
18. G06LV00M	Judging Qualities of Things, Srvcs., People	0.190	L
19. G07LV00M	Evaluating Info. Against Standards	0.192	L
20. G08LV00M	Processing Information	0.165	M
21. G09LV00M	Analyzing Data or Information	0.257	M
22. G10LV00M	Making Decisions and Solving Problems	0.268	L
23. G11LV00M	Thinking Creatively	0.179	M
24. G12LV00M	Updating & Using Job-Relevant Knowledge	0.293	L
25. G13LV00M	Developing Objectives and Strategies	0.209	H
26. G15LV00M	Organizing, Planning, and Prioritizing	0.230	L
G-IV.A.3. Work Output			
What physical activities are performed, what equipment and vehicles are operated/controlled, and what complex/technical activities are accomplished as job output?			
27. G21LV00M	Drafting & Specifying Tech. Devices; etc.	0.220	M
28. G22LV00M	Implementing Ideas, Programs, etc.	0.227	L
G-IV.A.4. Interacting With Others			
What interactions with other persons or supervisory activities occur while performing this job?			
29. G26LV00M	Interpreting Meaning of Info. to Others	0.189	H
30. G27LV00M	Communicating with Other Workers	0.194	M

Table 1 (continued)

Variable I.D.	Descriptor Name	Wage Correlation	Clerk Rank
31. G34LV00M	Coordinating Work & Activities of Others	0.167	M
32. G35LV00M	Developing and Building Teams	0.166	L
33. G36LV00M	Teaching Others	0.179	H
34. G37LV00M	Guiding, Directing, & Motivating Subord.	0.165	L
35. G38LV00M	Coaching and Developing Others	0.161	M
36. G39LV00M	Provide Consultation & Advice to Others	0.237	H

I-I.B.1. Occupational Interests

Score indicates how descriptive and characteristic each work environment (or interest area) is for an occupation.

37. I02OI00M	Investigative Occupational Interest	0.232	L
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K-II.C.1. Business and Management

Knowledge of principles and facts related to business administration and accounting, human and material resource management in organizations, sales and marketing, economics, and office information and organizing systems.

38. K01LV00M	Administration and Management	0.172	M
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K-II.C.3. Engineering and Technology

Knowledge of the design, development, and application of technology for specific purposes.

39. K09LV00M	Computers and Electronics	0.170	M
40. K10LV00M	Engineering and Technology	0.173	M
41. K11LV00M	Design	0.221	M

K-II.C.4. Mathematics and Science

Knowledge of the history, theories, methods, and applications of the physical, biological, social, mathematical, and geography.

42. K14LV00M	Mathematics	0.251	M
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K-II.C.6. Education and Training

Knowledge of instructional methods and training techniques including curriculum design principles, learning theory, group and individual teaching techniques, design of individual development plans, and test design principles.

43. K23LV00M	Education and Training	0.200	L
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K-II.C.9. Communications

Knowledge of the science and art of delivering information.

44. K32LV00M	Communications and Media	0.150	M
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V-I.B.2. Occupation Values

Extent to which work values and needs are likely to be reinforced or satisfied by an occupation.

45. V01EN00M	Ability Utilization Extent	0.307	L
46. V02EN00M	Achievement Extent	0.298	L
47. V04EN00M	Advancement Extent	0.254	M
48. V05EN00M	Authority Extent	0.208	L
49. V06EN00M	Company Policies and Practices	0.159	H
50. V07EN00M	Compensation	0.308	H

Table 1 (continued)

	Variable I.D.	Descriptor Name	Wage Correlation	Clerk Rank
51.	V09EN00M	Creativity	0.278	L
52.	V12EN00M	Recognition	0.298	M
53.	V13EN00M	Responsibility	0.279	L
54.	V16EN00M	Social Status	0.295	M
55.	V19EN00M	Variety	0.247	L
56.	V21EN00M	Autonomy	0.276	L
B-II.A.1. Content				
Background structures needed to work with and acquire more specific skills in a variety of different domains.				
57.	B01LV00M	Reading Comprehension	0.199	M
58.	B02LV00M	Active Listening	0.150	M
59.	B03LV00M	Writing	0.172	M
60.	B04LV00M	Speaking	0.185	M
61.	B05LV00M	Mathematics	0.258	M
62.	B06LV00M	Science	0.150	L
B-II.A.2. Process				
Procedures that contribute to the more rapid acquisition of knowledge and skill across a variety of domains				
63.	B07LV00M	Critical Thinking	0.265	M
64.	B08LV00M	Active Learning	0.278	L
65.	B09LV00M	Learning Strategies	0.212	L
66.	B10LV00M	Monitoring	0.218	L
C-II.B.1. Social Skills				
Developed capacities used to work with people to achieve goals.				
67.	C02LV00M	Coordination	0.201	L
68.	C03LV00M	Persuasion	0.201	M
69.	C04LV00M	Negotiation	0.219	L
70.	C05LV00M	Instructing	0.239	M
C-II.B.2. Complex Problem Solving Skills				
Developed capacities used to solve novel, ill-defined problems in complex, real-world settings.				
71.	C07LV00M	Problem Identification	0.259	M
72.	C08LV00M	Information Gathering	0.253	M
73.	C09LV00M	Information Organization	0.179	H
74.	C10LV00M	Synthesis/Reorganization	0.213	L
75.	C11LV00M	Idea Generation	0.287	L
76.	C12LV00M	Idea Evaluation	0.284	L
77.	C13LV00M	Implementation Planning	0.258	L
78.	C14LV00M	Solution Appraisal	0.276	L

Table 1 (continued)

Variable I.D.	Descriptor Name	Wage Correlation	Clerk Rank
C-II.B.3. Technical Skills			
Developed capacities used to design, set-up, operate, and correct malfunctions involving the application of machines or technological systems.			
79.	C15LV00M Operations Analysis	0.298	L
80.	C16LV00M Technology Design	0.178	L
81.	C17LV00M Equipment Selection	0.170	L
82.	C19LV00M Programming	0.165	L
83.	C20LV00M Testing	0.174	L
84.	C25LV00M Troubleshooting	0.161	M
C-II.B.4. System Skills			
Developed capacities used to understand, monitor, and improve socio-technical systems.			
85.	C27LV00M Visioning	0.301	L
86.	C28LV00M Systems Perception	0.270	L
87.	C29LV00M Identifying Downstream Consequences	0.286	L
88.	C30LV00M Identification of Key Causes	0.272	L
89.	C31LV00M Judgment and Decision Making	0.261	L
90.	C32LV00M Systems Evaluation	0.273	L
C-II.B.5. Resource Management Skills			
Developed capacities used to allocate resources efficiently.			
91.	C33LV00M Time Management	0.197	L
92.	C35LV00M Management of Material Resources	0.171	L
93.	C36LV00M Management of Personnel Resources	0.170	L
W-IV.C.1. Interpersonal Relationships			
This category describes the context of the job in terms of human interaction processes.			
94.	W16IJ00M Supervise, Coach, Train Other	0.167	M
95.	W17IJ00M Persuade Someone to a Course of Action	0.151	H
96.	W22IJ00M Coordinate or Lead Others	0.168	M
97.	W24RE00M Responsible for Outcomes and Results	0.165	H
W-IV.C.3. Structural Job Characteristics			
This category involves the relationships or interactions between the worker and the structural characteristics of the job.			
98.	W74SR00M Consequence of Error	0.215	L
99.	W79FC00M Frustrating Circumstances	0.185	L
100.	W83IJ00M Importance of Being Sure All is Done	0.157	H

Note: Wage Correlation is the simple correlation between the O*NET Job Descriptor and hourly earnings across 150,960 full-time wage and salary workers employed in 368 nonmanagerial, nonprofessional occupations. Rank designates whether the postal clerk O*NET rating places the clerk occupation in the lower third (L), the middle third (M), or higher third (H) of the percentile distribution of nonmanagerial, nonprofessional workers/occupations. See the text for additional detail.

with jobs that pay high. Here the linkage can arise from two sources: the jobs pay a lot because they are high skill jobs or because they are jobs with a high wage premium. On the other hand, the linkage between high "ability utilization" and high pay is linked to skill and not to the existence of a wage premium.

C. Postal Clerk Jobs versus Private Sector Jobs: How Do They Compare?

The second step is then to see how the Department of Labor ranks the postal clerk occupation in each of the 100 job descriptors. We characterize postal clerk jobs as being rated "high" for each separate O*NET job descriptor if it is in the top third of the distribution across a comparison group of private full-time workers. We characterize it as "low" if it is in the bottom third. For example, the postal clerk value for the descriptor measuring the job requirement of "Identifying Downstream Consequences" is 0.8. Across all nonmanagerial and nonprofessional workers (a sample size of 150,960 across 368 occupations) the 33.3 percentile for this job descriptor is 1.13 and the 66.7 percentile is 1.60. Thus, for the job descriptor "Identifying Downstream Consequences" postal clerks are characterized as having a "low" rating since they are in the bottom third. For the job descriptor measuring the extent to which the job satisfies the occupational value or need for "Compensation" the postal clerk job is rated as 3.3, whereas for the same comparison group of workers the 33.3 percentile is 2.75 and the 66.7 percentile is 3.25. Postal clerks are in the top third and, thus, characterized as having a "high" rating for the compensation job descriptor.

The third step is then to analyze the implications of the O*NET database for our wage premium analysis. This can be accomplished by performing the job descriptor analysis described above in the context of certain comparison groups.

The first comparison shown in Table 2 is with all occupations, excluding professional and managerial occupations. In this job universe, postal wages are relatively high. In fact, the ratio of mean postal clerk wages to mean wages for all nonprofessional, nonmanagerial workers is 1.33. Absent a wage premium, one would therefore expect that the postal clerk occupation would also rate

**Table 2: How Do Postal Clerk Jobs Compare to Other Occupations? Analysis
Using the 100 O*NET Job Descriptors Most Highly Correlated with Pay**

Block 1

Postal Clerk O*NET Values versus Nonmanagerial and Nonprofessional Jobs

Postal Clerk job has "High" value (top third)	10 / 100
Postal Clerk job has "Middle" value (middle third)	33 / 100
Postal Clerk job has "Low" value (bottom third)	57 / 100

Postal Clerk Wage \$16.99 Private Sector Wage \$12.81 Ratio 1.33

Block 2

Postal Clerk O*NET Values versus Administrative Support, Including Clerical (ASIC)

Postal Clerk job has "High" value (top third)	17 / 100
Postal Clerk job has "Middle" value (middle third)	17 / 100
Postal Clerk job has "Low" value (bottom third)	66 / 100

Postal Clerk Wage \$16.99 ASIC Wage \$11.79 Ratio 1.44

Block 3

Postal Clerk O*NET Values versus 37 Most Similar Pay Occupations

Postal Clerk job has "High" value (top third)	2 / 100
Postal Clerk job has "Middle" value (middle third)	12 / 100
Postal Clerk job has "Low" value (bottom third)	86 / 100

Postal Clerk Wage \$16.99 Similar Pay Jobs \$17.22 Ratio 0.99

Block 4

Postal Clerk O*NET Values versus Transportation, Communication, and Utility (TCU)

Postal Clerk job has "High" value (top third)	14 / 100
Postal Clerk job has "Middle" value (middle third)	25 / 100
Postal Clerk job has "Low" value (bottom third)	61 / 100

Postal Clerk Wage \$16.99 TCU Wage \$15.81 Ratio 1.07

Table note: See text for details. High paying O*NET characteristics are the 100 out of 259 O*NET variables with a positive correlation with wages exceeding 0.15, based on a large 1998-99 CPS sample of full-time nonmanagerial and nonprofessional private sector wage and salary workers (n=150,960). Wages, calculated from the 1998-99 CPS and expressed in 1998-99 dollars, measure average hourly earnings including tips, commissions, and overtime. The wage ratio is mean postal clerk wages divided by the mean of the comparison group wage.

comparably high in terms of O*NET ratings, with job descriptor values for postal clerks tending to be in the top third of the distribution and with few in the bottom third.

The reverse is true. As shown in the first block of Table 2, of the 100 variables associated with high pay, postal clerks are rated high (in the top third) in only 10 of the 100 variables. This includes the "values compensation" variable noted above, along with other job variables far less highly correlated with wages. Postal clerks are rated low (in the bottom third) for 57 of the 100. This group includes the bulk of the skill- and knowledge related variables.

It is useful to inspect more fully the 57 O*NET variables in which postal clerks are ranked in the bottom third among nonprofessional, nonmanagerial occupations, and the 10 variables in which clerks are ranked high. In the far right column of Table 1, which lists the 100 job descriptors most highly related to pay, the letter "H", "M", or "L" is included to designate whether postal clerks ranked in the highest third, middle third, or lowest third.

It is instructive to look through Table 1 to see the pattern of rankings. Postal clerk jobs are rated low to middle in a host of core skill-related job descriptors. For example, in Cognitive Ability measures, postal clerk jobs are ranked low in 8 and middle in 4. In Information Input, postal clerk jobs are ranked low for all 5 descriptors. In Mental Processes, postal clerk jobs rank low in 5, middle in 3, and high in 1. In Complex Problem Solving Skills, postal clerk jobs rank low in 5, middle in 2, and high in only 1. In Technical Skills, there are 5 low rankings and 1 middle ranking. In the System Skills and Resource Management Skills categories, rankings for all descriptors are low.

There are no categories where postal clerk jobs are given more high rankings than low or middle. In the Interacting with Others category, there are roughly equal numbers of high, lows, and middles. And in Interpersonal Relationships, there are equal numbers of highs and middles.

The Occupation Values are also very mixed, but they carry different messages. Postal clerks are ranked high for descriptors measuring the extent to which the job satisfies workers' valuation and need for compensation and knowledge of company policies and practices. Postal clerks are ranked

low based on the extent to which the job satisfies workers' valuation and need for such things as ability utilization, creativity, and responsibility.

In sum, postal clerks are paid more than workers in the economy who are employed in nonmanagerial, nonprofessional occupations. All else equal, one would expect postal workers to also come out high when the postal job is rated for its skill and knowledge content. However, using the 100 O*NET job descriptors most highly correlated with wages, the postal clerk occupation is generally evaluated as requiring relatively low skill and knowledge content, with a majority of postal clerk job descriptors ranked in the lower third.

Our second comparison -- see Block 2 of Table 2 -- is with the Census Bureau occupational category known as "Administrative Support, including Clerical" (ASIC). The Census Bureau categorizes postal clerks as being one of the ASIC occupations. Our CPS regression analysis follows the Census groupings and places postal clerks within the ASIC category. Here, we compare the O*NET rating of postal clerks to those of full-time workers in ASIC occupations (we exclude those in three supervisory occupations).

Postal clerk hourly earnings are substantially higher than in other ASIC occupations (a mean wage ratio of 1.44). Consequently, absent a wage premium, one would anticipate that the postal clerk job would be rated far higher across the 100 O*NET job descriptors associated with high pay. Although the postal wage is higher, postal job content is not. The postal clerk occupation is rated highly (in the top third) in only 17 out of 100 job descriptors and rated in the bottom third in 66 of the 100 O*NET job descriptors. Focusing on the skill- and knowledge-related variables, in particular those most associated with high pay, postal clerks are clearly rated low as compared to other administrative support and clerical occupations.²⁵

25. As noted previously, job working condition variables are not highly correlated with pay and thus not included among the 100 O*NET descriptors. We subsequently examine differences in working conditions.

There are a few implications of this finding. First, it cannot be argued that the CPS wage analysis includes postal clerks in an occupational category with low skill jobs. To the contrary, most administrative support and clerical jobs have skill requirements exceeding those for postal clerks.

Second, the result supports the existence of a high wage premium. Although ASIC occupations are higher skilled than postal clerk occupations, postal clerks are paid a much higher wage.

Finally, the low-skill ranking of postal clerks in the O*NET analysis helps explain why the CPS-DOT premium is higher than the CPS-only premium. In the CPS-only wage equation, postal clerks are assumed to have the same skill as other ASIC occupations, controlling for education and experience. The result is a lower wage premium. In the CPS-DOT wage equation, with many O*NET-type variables included, the lower skill level of clerks (compared to the average for ASIC workers) is captured in the model, with the result that the estimated premium is higher.

The third block in Table 2 compares postal jobs to private sector jobs whose pay is most similar to postal clerk pay. For this comparison, we need to include professional and managerial jobs. If the wages are similar, absent a postal wage premium, O*NET ratings should be roughly the same, with about the same number of job descriptors in the bottom and top thirds. On the other hand, if a wage premium is present, one would predict that postal clerks would have lower O*NET values than do similarly paid occupations, with a disproportionate share in the bottom third of the distribution.

In order to determine which occupations have similar pay, we turned to the BLS publication, *Employment and Earnings*, which in the January issue provides median weekly earnings for full-time workers based on the previous year's CPS. We selected the 37 occupations that had median earnings within \$50 of median postal clerk weekly earnings (i.e., occupations with pay from \$646 to \$746, as compared to a \$696 median listed for postal clerks). Of these 37 occupations, 13 are classified by BLS as professional and managerial jobs. We then took the mean value across these 37 occupations (weighted by employment) for the 100 O*NET variables most strongly associated with higher pay.

Results are clear-cut, supporting the presence of a substantial postal wage premium. Postal clerks have values in the bottom third of the distribution among similarly paid occupations for 86 of the 100 O*NET variables associated with high pay. They have a high value (the top third) for only two job descriptors. One of these is a values variable measuring the extent to which the job's "company policies and practices" are likely to reinforce or satisfy workers' values and needs. The other is a structural job characteristics variable measuring the "importance of being sure all is done" on a job.

As might be expected, these 37 occupations with pay similar to postal clerks are high skill jobs. In fact, these 37 occupations had an average (median) O*NET value exceeding that for postal clerks for 95 of the 100 job descriptive traits, with the postal value exceeding the "same pay" median in just five cases. The postal clerk value was greater than the nonmanagerial/nonprofessional median for just 26 of the 100. In short, occupations that have pay similar to the pay of postal clerks have high values of those job characteristics most associated with high pay. The postal clerk occupation does not.

In previous arbitration hearings, the union has compared postal wages to those of (selected) workers in transportation, communication, and utility (TCU) industries. In Block 4 of Table 2 we focus on the O*NET rankings of nonmanagerial and nonprofessional occupations among workers in the TCU industries. Excluding managers and professionals, workers in TCU are paid \$15.81 per hour. This compares to a postal clerk wage of \$16.99 per hour. As before, of the 100 O*NET variables most associated with high pay, we compare the value of each of these variables in the postal clerk job with the values among nonprofessional, nonmanagerial workers in TCU industries. Postal clerks are ranked in the highest third of the distribution in only 14 of the 100 job descriptors and are in the middle third for 25. For 61 of the 100 job descriptors most associated with high pay, postal clerks rank in the bottom third of the distribution among jobs in transportation, communications, and utility industries.

D. Occupational Working Conditions: How Do Postal Jobs Compare?

As discussed above, no working condition variables made the list of 100 job descriptors most strongly associated with higher pay. It is still informative, however, to compare postal clerk jobs with other occupations in terms of working conditions. A limitation of this analysis is that we can say little about the precise relationship between each of these working conditions and pay. We may know that an occupation requires, for example, working in bright or dim light, but do not know whether such a working condition requires a compensating wage differential and, if so, what magnitude.

The 39 O*NET job descriptors that can be readily classified as job working conditions are listed in Appendix Table 1. A high value on these typically signifies a workplace disamenity, for example, descriptors measuring the frequency of exposure, the likelihood of injury, and the severity of injuries from various types of job hazards.

Results using the working condition variables are presented in Table 3, with the presentation being analogous to that presented previously in Table 2. As compared to all private sector nonmanagerial and nonprofessional jobs (Block 1), postal clerk jobs receive a "low" (bottom third) rating for 28 of the 39 working conditions. The low ranking means "low disamenities" or "favorable working conditions" for that job descriptor. Postal clerks receive a "high" rating for 7 working condition descriptors. These descriptors measure: Frequency in Conflict Situations, Dealing with Unpleasant/Angry People, Dealing with Physically Aggressive People, Standing, Bending or Twisting the Body, Making Repetitive Motions, and Wearing a Special Uniform. All but the first of these descriptors tend to be associated with lower paying jobs (i.e., a negative simple correlation with wages).

A highly similar pattern is found when we compare postal clerks to either the 37 occupations with similar pay (Block 3) or the jobs in the transportation, communication, and utility industries (Block 4). The postal clerk occupation is seen to rank low on 24 of 39 working conditions, as compared to the 37 occupations with similar pay. This means that postal clerk jobs have favorable working conditions with respect to 24 of the working conditions. Postal clerks rank high (meaning

**Table 3: How Do Postal Clerk Jobs Compare to Other Occupations? Analysis
Using 39 O*NET Job Working Condition Descriptors**

Block 1

Postal Clerk O*NET Values versus Nonmanagerial and Nonprofessional Jobs

Postal Clerk job has "High" value (top third)	7 / 39
Postal Clerk job has "Middle" value (middle third)	4 / 39
Postal Clerk job has "Low" value (bottom third)	28 / 39

Postal Clerk Wage	\$16.99	Private Sector Wage	\$12.81	Ratio	1.33
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Block 2

Postal Clerk O*NET Values versus Administrative Support, Including Clerical (ASIC)

Postal Clerk job has "High" value (top third)	21 / 39
Postal Clerk job has "Middle" value (middle third)	4 / 39
Postal Clerk job has "Low" value (bottom third)	14 / 39

Postal Clerk Wage	\$16.99	ASIC Wage	\$11.79	Ratio	1.44
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Block 3

Postal Clerk O*NET Values versus 37 Most Similar Pay Occupations

Postal Clerk job has "High" value (top third)	6 / 39
Postal Clerk job has "Middle" value (middle third)	9 / 39
Postal Clerk job has "Low" value (bottom third)	24 / 39

Postal Clerk Wage	\$16.99	Similar Pay Jobs	\$17.22	Ratio	0.99
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Block 4

Postal Clerk O*NET Values versus Transportation, Communication, and Utility (TCU)

Postal Clerk job has "High" value (top third)	7 / 39
Postal Clerk job has "Middle" value (middle third)	1 / 39
Postal Clerk job has "Low" value (bottom third)	31 / 39

Postal Clerk Wage	\$16.99	TCU Wage	\$15.81	Ratio	1.07
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Table note: See text for details. O*NET characteristics are the 39 out of 259 O*NET descriptors measuring occupational working conditions. The distribution of the O*NET values are calculated from a matched sample of O*NET and a large 1998-99 CPS sample of full-time nonmanagerial and nonprofessional private sector wage and salary workers (n=150,960). Wages, calculated from the 1998-99 CPS and expressed in 1998-99 dollars, measure average hourly earnings including tips, commissions, and overtime. The wage ratio is mean postal clerk wages divided by the mean of the comparison group wage.

unfavorable working conditions) on only 6 of 39 working conditions, all of these being descriptors associated with low pay. These are the same descriptors listed previously, minus "Frequency in Conflict Situations." With respect to TCU, postal clerks rank low in 31 of 39 descriptors and high in 7 of 39 – the same 7 listed previously for the comparison with all nonmanagerial and nonprofessional occupations. In short, as compared to other nonmanagerial and nonprofessional occupations, jobs in TCU, and jobs with similar-pay, postal clerk jobs are not rated as having a large number of onerous working conditions.

A different pattern emerges when we compare the postal clerk jobs to occupations in the category administrative support, including clerical (ASIC), as seen in Block 2. Postal clerks are found to have 21 of 39 working conditions rated "high" (top third). Although the Census Bureau properly includes postal clerk jobs in the ASIC category, they are more physical and involve more difficult working conditions than the average ASIC occupation.

E. Conclusion

In this section, we use the Department of Labor's new occupational database – O*NET – in order to compare postal jobs with non-postal jobs. The results are clear. Among the many job attributes that characterize high paying jobs, postal clerks typically are ranked very low (in the bottom third of all nonmanagerial and nonprofessional workers). As compared to administrative support and clerical occupations, which on average pay substantially less than postal jobs, postal clerks tend to be ranked lower along most of those dimensions associated with high pay. Compared to those occupations with pay similar to that of postal clerks, the clerk job is ranked as having lower values of virtually all of the O*NET job characteristics most associated with higher pay. Postal clerks also rank low compared to the jobs of nonmanagerial and nonprofessional workers employed in the transportation, communication, and utilities industries.

Our analysis using O*NET reinforces previous conclusions based on the CPS-DOT analysis. Contrary to the assertion of the unions, the CPS-only wage premium is not misleadingly high owing

to a failure to measure the requirements of postal clerk jobs. Instead, the O*NET analysis supports the CPS-DOT results which indicate that when job traits are included in the analysis, the postal wage premium actually increases. As measured in the CPS-DOT and O*NET analyses, job skills in postal jobs are below the average in jobs held by private sector workers. This suggests that the CPS-only premium understates the true postal premium.

With respect to working conditions, our O*NET analysis suggests a small negative overall effect of working conditions. Postal clerks can certainly point to some adverse working conditions associated with their job. Many postal clerks are required to make repetitive motions, stand for several hours, or wear uniforms. But most occupations, particularly among nonprofessional and nonmanagerial categories, have some adverse working conditions. For example, some require that workers handle hazardous equipment, climb ladders, or wear protective or safety attire. In any case, as we noted earlier, none of these working conditions are highly correlated with pay. In the CPS-DOT analysis we indicated that the wage premium is reduced, but only slightly, on account of adverse working conditions. On balance, the evidence in this section supports that conclusion. The clerk occupation has more adverse working conditions than other ASIC occupations, but has a modest number of adverse working conditions when compared to all nonprofessional, nonmanagerial occupations.

Appendix Table 1.
O*NET Content Model Descriptors: 39 Working Condition Variables

W-IV.C.1 Interpersonal Relationships

This category describes the context of the job in terms of human interaction processes.

1. W25CF00M Frequency in Conflict Situation
2. W26CF00M Frequency Deal with Unpleasant/Angry People
3. W27CF00M Frequency Deal with Physically Aggressive People

W-IV.C.2 Physical Work Conditions

This category describes the work context as it relates to the interactions between the worker and the physical job environment.

4. W36FN00M Sounds, Noise Levels are Distracting, etc.
5. W37FN00M Very Hot or Cold
6. W38FN00M Extremely Bright or Inadequate Lighting
7. W39FN00M Contaminants
8. W40FN00M Cramped Work Space, Awkward Position
9. W41FN00M Whole Body Vibration
10. W42FN00M Radiation (Frequency)
11. W42LI00M Radiation (Likelihood of Injury)
12. W42DI00M Radiation (Degree of Injury)
13. W43FN00M Diseases/Infections (Frequency)
14. W43LI00M Diseases/Infections (Likelihood of Injury)
15. W43DI00M Diseases/Infections (Degree of Injury)
16. W44FN00M High Places (Frequency)
17. W44LI00M High Places (Likelihood of Injury)
18. W44DI00M High Places (Degree of Injury)
19. W45FN00M Hazardous Conditions (Frequency)
20. W45LI00M Hazardous Conditions (Likelihood of Injury)
21. W45DI00M Hazardous Conditions (Degree of Injury)
22. W46FN00M Hazardous Equipment (Frequency)
23. W46LI00M Hazardous Equipment (Likelihood of Injury)
24. W46DI00M Hazardous Equipment (Degree of Injury)
25. W47FN00M Hazardous Situations (Frequency)
26. W47LI00M Hazardous Situations (Likelihood of Injury)
27. W47DI00M Hazardous Situations (Degree of Injury)
28. W61FN00M Standing
29. W62FN00M Climbing Ladders, Scaffolds, Poles, etc.
30. W63FN00M Walking or Running
31. W64FN00M Kneeling, Crouching or Crawling
32. W65FN00M Keeping or Regaining Balance
33. W66FN00M Using Hands on Objects, Tools, Controls
34. W67FN00M Bending or Twisting the Body
35. W68FN00M Making Repetitive Motions
36. W70FN00M Special Uniform
37. W72FN00M Common Protective or Safety Attire
38. W73FN00M Specialized Protective or Safety Attire
39. W99FN00M Outdoors

V. Results of the New Hire Survey

A. Introduction

An important feature of our work is the use of alternative approaches and databases to measure the magnitude of the postal premium. In this section we examine “longitudinal” evidence from the Postal Service’s New Hire Survey to measure wage gains as workers move from private sector jobs into postal employment. The term longitudinal comes from the fact that workers are moving over time from one job to another. The Postal Service, at our request, sampled their clerk and other new hires during 1999-2000 to obtain information on the wage these workers received on their last job and the industry and occupation in which they worked.

Longitudinal evidence on wage changes is widely used in the academic research literature and is well suited for measurement of the postal wage premium. It has a highly distinctive advantage over the CPS-only and CPS/DOT analyses, where postal workers are compared to comparable workers in the private sector. Longitudinal data automatically controls for worker skills, since one is comparing wages for the same individuals at two points in time, rather than comparing wages across different workers.

Using the New Hire Survey data, the comparison is not between postal workers and a group of comparable private sector workers and jobs. Instead, it is between the postal worker's last private sector wage and that *same worker's* postal wage at entry.

In this section, we present evidence on the wage gains among postal clerk new hires and discuss the important implications of longitudinal analysis for assessing postal wage comparability.

B. New Hire Survey Premium

The New Hire Survey premium for postal clerks is calculated as the mean percentage wage change between the entry-level postal wage and the wage on the last private sector job (their

opportunity wage).²⁶ The survey includes career APWU new hires from April 1, 1999 through March 30, 2000. In calculating the New Hire Survey premium, the sample is restricted to workers over the age of 25 who have been employed full-time within the last twelve months in the private sector and were hired by the Postal Service as clerks. The former restriction omits younger workers who may have been previously employed part-time in noncareer, youth jobs. The twelve-month restriction assures a private sector wage that is current with the entry postal wage levels. Following these restrictions, the sample includes 384 clerk new hires.

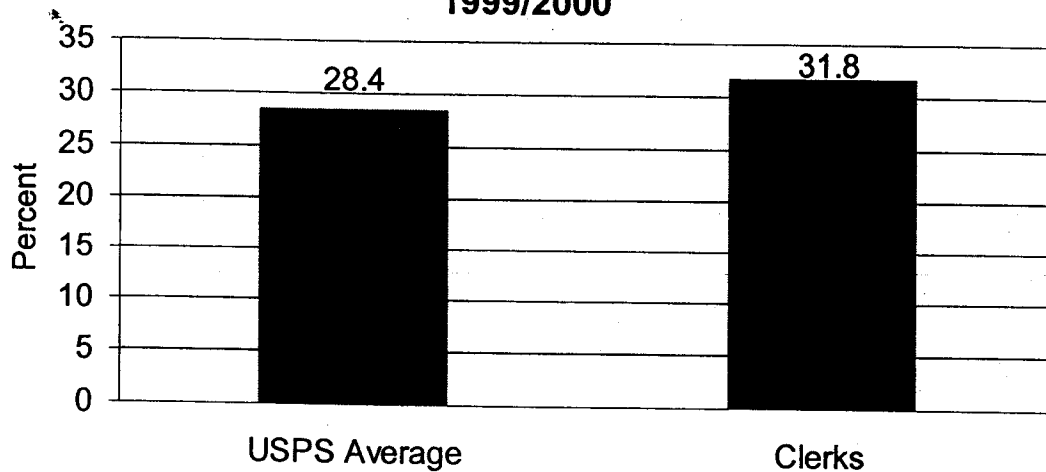
The principal result from the New Hire Survey is that the clerk New Hire Survey wage premium is 31.8 percent, as shown in Figure 2.²⁷ For all clerks, city carriers, and mailhandlers, the average wage increase was 28.4 percent. This result indicates that new hires, on average, receive enormous wage increases over their previous wage in full-time private sector jobs. This figure is noteworthy since postal new hires start in the lower entry steps introduced in earlier arbitrations.

A part of this huge increase, but only a small part, can be attributed a normal return to mobility or job change. To evaluate this issue, we have measured average year-to-year real (inflation-adjusted) wage changes among a large CPS panel of workers ages 30 to 45 switching between full-time private sector jobs that involve a change in occupation and industry (as do postal clerk new

26. The percentage change is measured by the mean difference between the postal log wage and the private log wage. This is the measure used in the earlier sections of this report and in hundreds of academic studies. It provides a measure roughly midway between the percentage change calculated using the private wage base and that using the postal new hire wage base.

27. Absent the sample restrictions discussed above, the new hire sample size is larger and we obtain an even higher estimate of the new hire wage premium. As compared to a formal regression analysis, our new hire premium estimates do not provide explicit controls for other determinants of wage change. These are not needed since most personal characteristics do not change as one moves from the private sector to a postal job (e.g., schooling, gender, and race). In the general research literature, regression analyses of wage change most frequently hold constant changes in part-time status, union status, and experience squared. But in our new hire analysis, we include only workers who hold full-time postal and non-postal jobs, union status should not be controlled for since the PRA dictates a broader private sector comparison and union status is not a transferable skill variable, and there is little change in experience since wage change is measured from their most recent prior job. See Barry T. Hirsch, Michael L. Wachter, and James W. Gillula, "Postal Service Compensation and the Comparability Standard," Research in Labor Economics, Vol. 18, 1999.

Figure 2.
Postal Service New Hires Wage Premium:
1999/2000



Notes to Figure 2:

The percentage wage increase is calculated by the mean of the log wage in the initial postal job minus the log wage on the previous non-postal job.

Data on Postal Service clerk new hires were taken from employment applications (form 2591) and personnel action forms (form 50). New postal clerks hired between April 1, 1999 to March 30, 2000 were included in the sample.

Data reported for new hires were screened for errors in reporting age, education, previous industry, previous occupation, gender, race and previous salary. Observations reporting earnings of less than \$4.50 per hour or more than \$35.00 per hour were eliminated.

The sample used in making salary comparisons with the private sector was limited to new hires who were 25 years or older and were previously employed full-time (35 hours or more) in the private sector.

To avoid a bias in the postal-versus-previous wage comparison due merely to inflation, only new hires that were working at their previous job within the 12 months prior to joining the Postal Service were included in the salary comparison.

hires). Mean real wage change among these private sector job changers is about 4 ½ percent.²⁸

Therefore, were we to net out the modest gains associated with (largely voluntary) job change, it would reduce the New Hire Survey premium, but only by a small portion of the total new hire wage gain.²⁹ Since the 4½ percent increase is for years 1996 through 2000, when unemployment was relatively low, it represents an upper bound on the return to job mobility. Indeed, in years when the economy is in a recession and many high wage workers are permanently displaced, the return to job switching is negative.

C. Measurement of Wage Differentials with Longitudinal Analysis

In the academic research literature, longitudinal analysis is frequently used to measure wage differentials because it accounts for otherwise unmeasured skills embodied in workers ("fixed effects"). It is widely used in the estimation of union-nonunion wage differentials because it addresses the possibility of unmeasured skill differences between union and nonunion workers. The benefits of longitudinal analysis are well known. For instance, Richard Freeman has stated:³⁰

Longitudinal data, which follow the same worker over time, offer researchers a potentially valuable way to examine often-raised objections to the findings of cross-section studies. Unlike complex "structural model" approaches to cross-section data problems, which often yield unstable and uninformative results, longitudinal data offer a distinctively different "experiment" for uncovering the effects of changes in economic variables. In the case of unions, what is a more natural way to study what unions do than to compare economic outcomes for workers (firms) before and after they change union status?

28. The estimate of 4 ½ percent is for the years 1996 to 2000. This period was marked by tight labor markets and low unemployment rates. There is evidence that the gain from job switching varies over the business cycle, being highest when unemployment is low.

29. For further details of this analysis, see Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard." In this article, the authors also provide estimates indicating roughly similar wage changes using the 1994 New Hire Survey and the small samples of postal entrants and postal leavers from CPS matched panels. The New Hire Survey is preferred to the CPS panels since the former has a larger sample size of postal entrants and misclassification error is not a concern.

30. Richard Freeman, "Longitudinal Analyses of the Effects of Trade Unions," Journal of Labor Economics, January 1984, p. 1. Freeman's use of the term "structural model" refers to estimation of "selection" models that attempt to account for how workers enter the union sector, and then use this information to estimate a union premium. Estimates from such models have proven to vary over a wide and implausible range, leading Freeman and others to regard these approaches as unreliable.

In a similar vein, David Card states:³¹

Over the past decade several alternative approaches have been developed to control for unobserved heterogeneity between union and nonunion workers. One method that has been successfully applied in other areas of applied microeconometrics is the use of longitudinal data to measure the wage gains or losses of workers who change union status.

The comments by Freeman and Card indicate that if one conjectures that union workers might be more skilled than nonunion workers, longitudinal analysis provides the method for answering the question. In past arbitration proceedings, the CPS-only or CPS-DOT analyses of the postal wage premium have been criticized by the union expert economists on the grounds that unionized postal workers are more skilled than nonunion private sector workers with otherwise identical measured skills. In no case have they provided reliable evidence supporting this contention.

The new hire data provide a database to answer this question. If postal clerks have a high level of unmeasured skills, then the wage gain realized by new hires should be *lower* than the postal wage premium seen in our CPS analysis. As seen above, we find exactly the opposite—a substantially higher New Hire Survey wage premium than CPS-only premium. Based on longitudinal analysis from the New Hire Survey, the clear implication is that postal clerks have low rather than high levels of unmeasured skill.

The same question of unmeasured skills that has arisen in postal arbitration hearings has arisen more broadly in the literature on public/private sector wage comparability. Alan Krueger and Steven Venti, among others, have recommended focusing on the longitudinal wage changes among entrants to measure public sector wage differentials in order to control for otherwise unmeasured worker skills.³² Besides controlling for unmeasured skill, another advantage of the postal new hire

31. David Card, "The Effect of Unions on the Structure of Wages: A Longitudinal Analysis." *Econometrica*, July 1996, p. 957.

32. Alan B. Krueger, "Are Public Sector Workers Paid More Than Their Alternative Wage? Evidence from Longitudinal Data and Job Queues." In *When Public Sector Workers Unionize*, ed. Richard B. Freeman and Casey Ichniowski, Chicago: University of Chicago Press, 1988, and Steven Venti, "Wages in the Federal and Private Sectors." In *Public Sector Payrolls*, ed. David Wise, Chicago: University of Chicago Press, 1986. Krueger discusses the advantages of measuring public/private sector wage differentials by focusing on wage changes among entrants, as we do with the New Hire Survey. He also recommends examining the number of applications per job opening.

database is that it is largely free of the major problem that plagues many longitudinal analyses; the presence of “misclassification” error on the principal variable of interest (e.g., the change in union status in the union premium literature). That is, if union status is incorrectly classified in one of the two survey points, that worker will be incorrectly assumed to have changed status. Misclassification error is not an issue in the case of the New Hire Survey, because the variable of interest is postal employment and we know with certainty that all of the new hires are correctly classified as having switched their employment status from nonpostal to postal.³³

D. Employment Experience of New Postal Hires

Confirming the evidence on the size of the New Hire Survey wage increase is information in the Survey on the industries and occupations from which postal workers are drawn. The previous industry of employment for new clerk hires is shown in Figure 3. Once again, we exclude those individuals below the age of 25 and those not employed full time in the private sector within the last twelve months. Nearly 65 percent of new clerk hires had previously been employed in finance, retail and wholesale trade, and services. Another 24 percent had been employed in the manufacturing sector. Only 8 percent had been employed in the transportation, communications, and public utilities sectors, an industry which tends to figure heavily in the union’s presentation. Similarly, the industry breakdown shown in Figure 3 indicates that most new hires come from industries where union density is low, another comparison group favored by the union.

33. Were misclassification a problem in the postal analysis, it would bias estimates of the postal premium downward. An additional concern in many longitudinal studies is potential bias from non-random selection, since one is likely to disproportionately observe new hires who have had bad private sector wage “draws” relative to those with good draws. Krueger notes that where there exists a wage premium and a job queue, selection into public employment can be likened to a lottery win (i.e., random selection), and there should be little bias in the measurement of wage differentials. Although Krueger uses federal employment as his example, this argument applies with far greater force to postal employment, where compensation premiums and queues are even larger. In order to avoid such selection bias, several studies analyze evidence from workers displaced from their previous job, since such displacement can be treated as an “exogenous” job switch unrelated to expected wage change. When we use the CPS Displaced Worker Surveys to analyze the relatively small number of displaced private sector workers who subsequently obtain postal employment, we find large wage gains, similar to those obtained from the New Hire Survey. This supports our belief that selection bias is not a serious problem. See Hirsch, Wachter, and Gillula, “Postal Service Compensation and the Comparability Standard.”

Figure 3
Previous Industry of 1999/2000 Postal New Hires

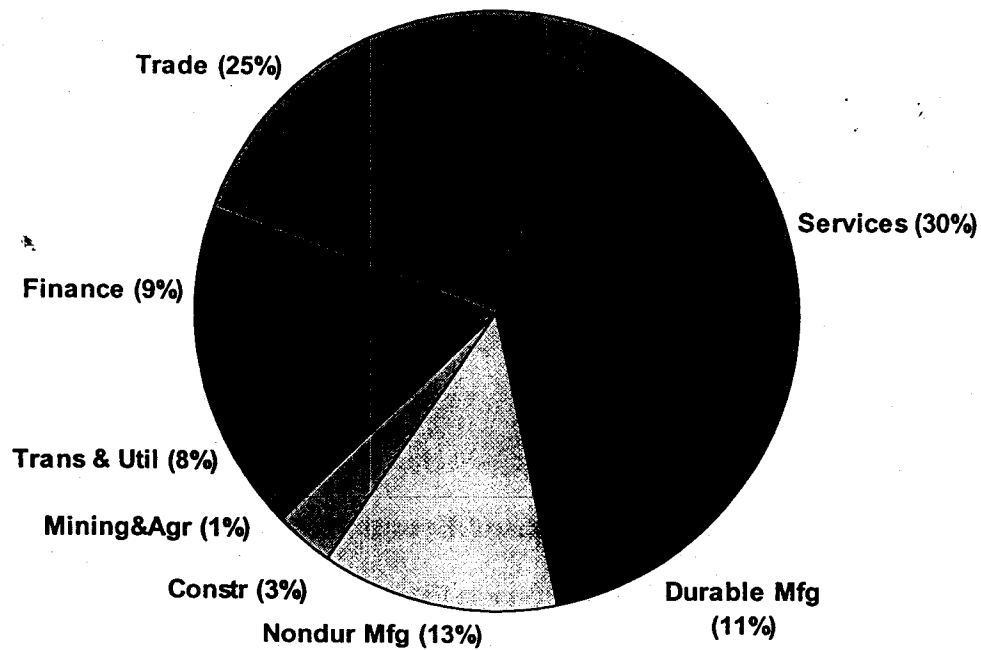


Figure 4
Previous Occupation of 1999/2000 Postal New Hires

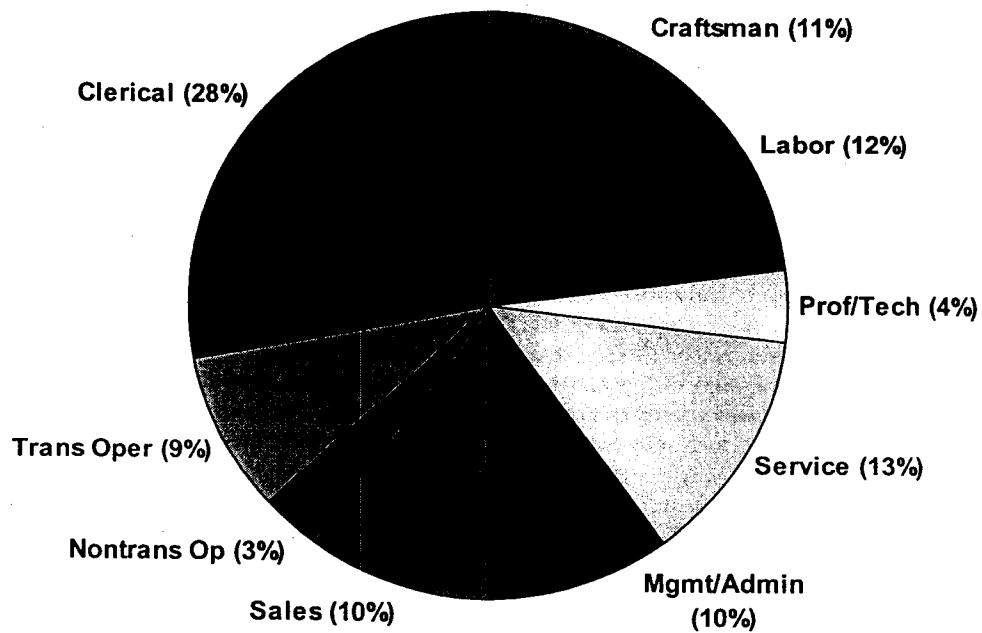


Figure 4 shows the previous occupation of newly hired postal clerks. A majority had previously been employed in nonprofessional white-collar occupations, specifically, 28 percent clerical jobs, 13 percent in service jobs, and 10 percent in sales positions. Only 14 percent were employed in professional, technical, management, and administrative jobs. Finally, 35 percent were employed in various blue-collar positions.

This profile of postal clerk new hires is useful in defining comparable levels of work in the private sector, as required by the PRA. It is too easy, but unsupported by the new hire data, to compare postal workers in a "physicalistic" way to private sector blue-collar workers who operate transportation equipment or are employed in the transportation industry. Comparability is more correctly defined to encompass the types of work that postal clerks perform at the Postal Service and the types of work they actually performed when employed in the private sector. The new hire data show that postal clerks are drawn from a full array of occupations and industries across the economy.

E. Comparing the New Hire Survey Premium with the CPS and CPS-DOT

The New Hire Survey clerk wage premium of 31.8 percent is much higher than the CPS-only wage premium of 21.2 percent and slightly below the CPS-DOT clerk premium of 35.7 percent. Why the differences? In particular what explains the large difference between the CPS-only wage premium on the one hand and the New Hire Survey and CPS-DOT premiums on the other hand?³⁴

The explanation is in the degree of refinement with which the control group is specified. The weakness in the CPS-only premium has been that it is based on only a few control variables, comparing postal workers with private sector workers with comparable levels of schooling, occupation, region, and a few other measures. Although these are the single most basic measures of worker skills, material unmeasured skill differences might still exist. In earlier interest arbitrations, union expert economists argued that the wage premium would be much lower if more refined control

34. One possible factor is that the New Hire Survey premium measures the premium at the point of hire. Although this could explain part of the difference between the New Hire Survey premium and the CPS-only premium, it would fail as a general explanation because, if it were true, one would expect the CPS-DOT premium to be low as well.

variables were included. We responded that although the inclusion of other variables would be useful, there was no way of knowing whether the wage premium would increase or decrease.

We now know the answer. The CPS-DOT job skill variables account for many worker and job skills not measured by the basic CPS-only variables. Specifically, the CPS-DOT database adds 30 variables, 16 measuring skill factors and 14 measuring working conditions. This represents a large increase in the number of control variables and increases the precision with which we estimate the wage premium. It is also the case that the CPS-only variables measure skills as reported by workers and are largely skills embodied in those workers (an example being years of education). The new variables from the DOT are measures of job traits; that is, the skill and working conditions required by the job. When these additional variables are introduced, the postal premium increases.

Reinforcing the CPS-DOT results is our new analysis using the O*NET occupational database, which shows that job analysts evaluate the postal clerk job as having low ratings among the skill measures and other job descriptors most associated with high pay.

With the New Hire Survey approach the focus is again on the skill embodied in the worker. But the New Hire Survey also adds substantially to the precision with which we define the control group. Whereas the CPS-only approach created a control group based on relatively few skill variables, the New Hire Survey approach controls for difficult-to-measure worker-specific skills by measuring wage change for given workers as they move from one job to another.³⁵

Taken together these results clearly show that the skills required of postal workers and postal jobs – unmeasured in the CPS-only analysis are low compared to the average unmeasured skills for non-postal workers and jobs. When controls are introduced for skill and working conditions embodied in the job the postal premium increases. When one accounts for otherwise unmeasured

35. The New Hire Survey premium accounts for worker-specific skills (since each worker's postal wage is compared to his or her private sector wage), but unlike the CPS-DOT, not for differences in working conditions between their private sector and postal jobs.

factors embodied in the worker – as in the New Hire Survey analysis – the postal premium again shows a sizable increase.

F. Skills and the Union Standard

Having completed our analysis of the question of unmeasured skills, we can better evaluate the union's position in past arbitrations that postal bargaining unit workers should be compared only to private sector union workers. To the extent that a justification has been provided for a union comparison, the argument provided by unions is that union workplaces are more productive than nonunion workplaces, or union workers more skilled than are nonunion workers with similar measured characteristics. Although the unions have been less than explicit or consistent in how they make this point, the point remains: the comparison group for postal workers should be union workers in the private sector.

We have referred to the union position as the "union standard," which we distinguish from our standard, "the private sector standard." We use the term private sector standard to denote the fact that we control for skill and working condition variables in a sample that contains workers from across the private sector. As noted earlier, our analysis compares postal workers with both unionized private workers and nonunion private sector workers. The postal premium, in our methodology, is a weighted average of the premium across these two groups, where the weights reflect the mix of these groups among nonmanagerial and nonprofessional workers in the private sector.

Analyses by union economists effects a union standard by inclusion of a union variable as a control variable.³⁶ In other words, the unions treat union status on a par with skill variables such as years of schooling and experience. In past arbitration proceedings, union experts have primarily

36. See, for example, the testimony at the 1995 Clarke hearings by Rakesh Kochhar of Joel Popkin and Company for the APWU, plus an earlier published paper by Martin Asher and Joel Popkin, "The Effect of Gender and Race Differentials on Public-Private Wage Comparisons: A Study of Postal Workers," Industrial and Labor Relations Review, October 1984. Testimony by Dale Belman for the NALC at the Stark and Fleischli hearings included CPS analysis using the union standard. For a brief description of this work, see Dale Belman and Paula Voos, "Postal Service Comparability: Issues of Definition and Measurement," Proceedings of the Forty-Ninth Annual Meeting, Industrial Relations Research Association, 1997.

relied on the CPS-only methodology. The effect of this change is to compare postal workers only with the unionized private sector workers.³⁷ In other words, their estimate of the CPS-only premium, which nonetheless remains positive, is the amount that postal workers are paid relative to comparable unionized private sector workers. Obviously, the effect of taking the union effect out of the premium is to reduce their estimate of the CPS-only postal premium. .

To appreciate our use of the term "union standard," think of how our CPS-only results would differ from the unions' CPS-only results if the entire economy were unionized. The answer is that they would not differ. Absent differences in specification with respect to other control variables, both sides would report the same estimate of the CPS-only wage premium. Consequently, the term union standard arises from the fact that our CPS-only results differ only to the extent that we estimate the premium across nonunion as well as union workers.

By treating union status as just another variable in the equation, akin to years of education, the unions are implicitly making very strong claims.³⁸ Either they are saying that postal workers need to be unionized to satisfactorily perform their job or that postal workers would necessarily have obtained a union job had they been employed in the private sector.

37. We use the term "standard" to designate those characteristics of postal workers that are used to define the private sector control group. For example, when we "controlled" for education, potential experience, and occupation using the CPS-only wage regressions, we obtain wage differential estimates as if we were explicitly matching postal workers with private sector workers with the same amounts of education, potential experience, and occupation. More precisely, the return on education is determined in the overall labor market and postal and private sector workers are then credited with the education that they have attained. Postal workers are assumed to need that level of education to satisfactorily perform their job tasks and it is assumed that they would have been able to command a wage in the private sector commensurate with those attributes. In our analysis, we do not treat union status like the schooling or experience variables. We are not (implicitly) saying that postal workers need to be unionized to satisfactorily perform their jobs and we are not saying that they would necessarily have obtained a private sector job paying union-level wages. Instead, much (but not all) of the union effect on wages is counted as part of the postal premium. In our work, "comparable levels of work" in the private sector is defined by worker skills, job characteristics, working conditions, and regional and city size variables, as those attributes are rewarded across union and nonunion jobs in the private sector.

38. The concept of transferable and nontransferable worker and job variables is discussed in Peter D. Linneman and Michael L. Wachter, "The Economics of Federal Compensation," *Industrial Relations*, Winter 1990. A detailed discussion of the union comparison issue is contained in Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard."

The union's claim that union status be treated as a skill variable, similar to education, is based on two related theories. First, according to this view, unionized postal workers are more skilled than workers with comparable measured skills. In this case, the union variable is a proxy for skill and should be included in one's definition of comparable levels of work. Second, unionized workplaces may be more productive than nonunion workplaces because working under a collective bargaining contract enhances worker performance.³⁹

The union has failed to provide evidence supporting the assertion that union postal workers are more productive than similar private sector workers. Moreover, even if it were the case that union status in the private sector is positively associated with unmeasured worker skills, it would not be correct to attribute the *entire* union wage advantage to skill. The union standard assumes that the union variable, in its entirety, reflects skill and only skill. This amounts to claiming that unions do not raise wages for their workers through collective bargaining and have no market power.

This is, of course, false. Much of the union wage advantage is due to its bargaining power and ability to obtain wage gains for its members, relative to what they would earn as nonunion workers. Nor is there evidence finding that unions consistently increase productivity. Even where unions are found to be associated with higher productivity, the productivity effect is not sufficient to

39. A very different argument for using a union standard of comparison is based on the types of jobs that postal workers could have obtained had they not been postal workers. Even if the union wage advantage is entirely a premium, the PRA dictate of comparability in compensation for levels of the work similar to the private sector permits postal wages to be higher to the extent that overall private sector wages are higher owing to union coverage. Our approach follows this logic, comparing postal wages to an employment-weighted average of private sector union and nonunion wages. In 2000, 13 percent of full-time private sector nonmanagerial and nonprofessional workers were union members, so we calculate the postal premium giving a .13 weight to union and a .87 weight to nonunion private sector wages. An alternative approach would be to assign union and nonunion weights based on the type of employment postal workers would have were they not postal employees. Of course, this counterfactual is not observable and must instead be approximated using some sort of prediction model. In previous work, we have estimated that between 11 and 17 percent of workers with postal characteristics would be union members were they employed in the private sector (see Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard."). Thus, the "13 percent assumption" implicit in our analysis appears to be consistent not only with the PRA, but also a reasonable approximation of opportunity cost wages for postal workers. For the union standard to be correct, one must make the patently false assumption that all bargaining unit postal workers would have been employed in a private sector union job.

offset higher wage costs.^{40,41} And even were it the case that in the private sector unions substantially increased productivity, a similar conclusion need not follow for the Postal Service.

As emphasized above, evidence from the New Hire Survey allows us to confront directly the assertion that union postal workers have unusually high unmeasured skills, making the union standard of comparison an appropriate measure. If postal new hires were more skilled than would be predicted based on their amount of schooling, potential experience, occupation, etc, then we should obtain a New Hire Survey postal wage premium substantially lower than the CPS-only wage premium.

As summarized earlier in this chapter, the clear result of the new hire analysis is a New Hire Survey premium that is higher rather than lower than the CPS-only postal premium.⁴² That is, the 31.8 percent wage gain among new postal clerks exceeds the CPS-only wage premium of 21.2 percent. Contrary to the union assertion of positive unmeasured skills, the longitudinal evidence points clearly toward the conclusion that unmeasured skills among postal workers are low relative to private sector workers, and that standard wage level estimates understate the postal premium. Analysis using the CPS-DOT and O*NET reinforce this conclusion. In short, the union standard cannot be justified on the basis of its being a skill proxy, at least not for postal workers.

40. A recent survey of labor economists at top universities indicated a consensus opinion that unions raise wage rates for their members by about 15 percent. The same survey reports that labor economists believe that unions, on average, have an effect on productivity that is close to zero. Chapter IX of our report provides details and a citation.

41. A conventional argument is that a union wage premium both allows and provides incentive for employers to upgrade the skill level of their workforce, offsetting part (but not all) of the higher wage. This conclusion need not follow. Walter Wessels provides a simple but persuasive challenge to the skill-upgrading hypothesis. If firms upgrade in response to a union wage increase, the union can then bargain in a future contract for an even higher wage in order to restore the premium. Employers, anticipating this, may respond by not upgrading. Firms that upgrade will face higher future wage demands and will have distorted their factor mix, using a higher skill labor mix than is optimal given its technology. Wessels reviews evidence and concludes that it is not consistent with skill upgrading. See Walter Wessels, "Do Unionized Firms Hire Better Workers?" *Economic Inquiry*, October 1994. More fundamentally, whatever the evidence from the private sector on unions and skills, it need not hold for the Postal Service, as clearly indicated by the evidence from the New Hire Survey.

42. Similar evidence of high wage gains for postal joiners (as well as losses for postal leavers) is found using data from CPS panels and the CPS Displaced Worker Surveys. These data have far smaller sample sizes and less accuracy than does the postal New Hire Survey used in this report. See Hirsch, Wachter, and Gillula, "Postal Service Compensation and the Comparability Standard."

We reject the union standard of comparison adopted (sometimes implicitly and sometimes explicitly) by postal union economists. As stated previously, the approach adopted in our analysis is to compare bargaining unit postal workers to both union and nonunion private sector workers, based on the proportions of union and nonunion nonprofessional and nonmanagerial workers throughout the private sector economy. Not only does this approach correspond closely with the language of the PRA, but it is likely to mirror the average opportunity cost or alternative private sector compensation that would be received by postal workers were they to work in the private sector.

G. Summary of Wage Premiums and Conclusion

Longitudinal wage change analysis using the New Hire Survey has provided an alternative method for estimating the wage premium for postal clerks. Table 4 summarizes the wage premium evidence we have provided from the CPS, the CPS-DOT, and the New Hire Survey. The CPS bargaining unit wage premium of 21.2 percent is based on a comparison of postal workers to private sector workers with similar measured characteristics (e.g., schooling, experience, city size, region). The CPS-DOT supplements the CPS with measures of occupational skill requirements and working conditions. The CPS-DOT wage premium is substantially higher – 33.9 percent – owing to the fact that postal jobs are rated by the Labor Department as requiring relatively low levels of most job skills. The New Hire Survey evidence of a 28.4 percent wage gain for postal new hires reinforces the CPS-DOT results. Whereas the DOT controls explicitly for job skill requirements, the new hire longitudinal analysis implicitly controls for skill through a comparison of the new hire wage to that same worker's wage in the previous full-time private sector job.

In addition to the bargaining unit wage premium, Table 4 summarizes the premiums for postal clerks calculated from the CPS-DOT and the New Hire Survey. The CPS-DOT wage premium for clerks is 35.7 percent, slightly above the average for all bargaining unit postal workers. The New Hire postal clerk wage premium is 31.8 percent, slightly above the average among all new hires.

Table 4
Postal Service Wage Premiums: Summary

	Wage Premium
<i>Postal Service (All Bargaining Unit)</i>	
CPS-Only Premium	21.2
CPS-DOT Premium	33.9
New Hire Survey Premium	28.4
<i>Postal Clerks</i>	
CPS-Only Premium	21.2
CPS-DOT Premium	35.7
New Hire Survey Premium	31.8

All percentage wage premiums are log wage differentials times 100.

These alternative pieces of evidence convincingly demonstrate that Postal Service salaries far exceed the comparability standard of the PRA and the pay needed to attract and retain qualified workers out of the private sector and into postal employment. Wage premium estimates from the CPS-DOT and New Hire Survey, along with the job content evidence from O*NET, demonstrate that the CPS-only premium represents a lower-bound estimate of the wage premium. A full accounting for job skills and working conditions leads to a higher, rather than lower, measure of the wage premium.

VI. Nonwage Benefits and the Postal Compensation Premium

In the previous sections, we have evaluated the Postal Service's wage premium, using the Current Population Survey (CPS), the CPS-DOT, and the New Hire Survey. These analyses do not include measures of the dollar value of nonwage benefits. In this section, we move from a measure of wages to overall compensation, in order to determine whether or not the Postal Service is adhering to the "compensation and benefits" standard of the PRA.

A. Total Compensation Premium

The CPS-only postal wage premium of 21.2 percent does not account for differences in benefits. Private sector benefit figures collected by the Bureau of Labor Statistics (BLS) allow us to extend the postal-private compensation comparison to include nonwage benefits and paid leave.

Benefits are usefully divided into two categories. The first category is nonwage benefits. Such benefits include insurance, i.e., health and life insurance, and retirement plans. The cost of such benefits to the Postal Service is a cash outlay to benefit providers like the Federal Employees Retirement System (FERS) or to the Federal Employees Health Benefit Program (FEHBP). These benefits are typically referred to as nonwage benefits because the funds go directly to purchase the benefit, which is then provided to the worker.

A dollar of nonwage benefits is often worth more to an employee than is a dollar of direct wages. Many workers would themselves buy health insurance policies and invest in pensions if those benefits were not provided by the employer. But, employer-paid plans cost the employer less than it would cost individual workers. Employers can pool administrative costs and spread the risk of individual insurance claims across the full complement of workers. In addition, most benefits are provided free of income and payroll taxes.

The second category of benefits is paid leave, providing paid vacations, sick leave and holidays to workers. This is a valuable benefit to workers and an extra cost to the Postal Service.

Given the total work hours required to meet mail volume, paid leave translates into higher employment levels and hence higher costs.

We first look at the benefits premium, focusing solely on the relative costs of postal clerk and private sector benefits. To calculate the benefit costs of the average private sector worker who is comparable to the average postal clerk, we assume that the postal clerk wage premium is approximated by the all-bargaining unit premium of 21.2 percent. Benefits for postal clerks are higher than private sector benefits in every major benefit category. As a percent of salary, nonwage benefits (pension and insurance) for private sector workers equal 21.4 percent. As shown in Table 5, private sector costs of nonwage benefits (pension and insurance) average \$6,508 for a full-time worker comparable to postal workers (a private sector worker with a wage of \$30,403). Based on a postal clerk salary of \$37,582, postal nonwage benefits, which are 28.6 percent of salary, cost \$11,533 per worker. The \$5,024 difference between these two figures represents a 57.2 percent Postal Service pension and insurance premium.⁴³ The clerk premium for paid leave benefits is an even larger 82.7 percent, based on postal clerk paid leave benefits of \$6,674 and private paid leave averaging \$2,919. Taken together, postal clerks realize a 65.8 percent total benefits premium, receiving benefits of \$18,207 versus average private sector benefits of \$9,427.

Given the very large benefits premium realized by postal clerks, this implies that the total compensation premium, which accounts for benefits as well as wages, exceeds by a considerable amount the wage premium estimates presented in prior sections of the report. And the PRA standard refers to comparability in compensation between postal and private sector jobs, rather than wages or benefits alone.

In Table 6, we show the derivation of the total compensation premium for bargaining unit postal clerks. The first component of benefits – retirement and insurance – raises the postal premium

43. As we did previously with wages, we state the benefit premiums in log points times 100, thus providing a percentage differential that lies between those obtained using a private or postal base.

Table 5.
Postal Service Clerk Premiums for Benefits

	Pension & Insurance	Paid Leave	Total Benefits
Postal Service Bargaining Unit Clerks	\$11,533	\$6,674	\$18,207
Comparable Private Sector	\$6,508	\$2,919	\$9,427
Difference	\$5,024	\$3,756	\$8,780
Premium*	57.2%	82.7%	65.8%

*Percentages are calculated as 100 times the difference in the logs of postal and private sector amounts to show the size of the postal-private gap independent of which of the two is used as the base.

Totals may not add to components due to rounding.

Notes to Table 5:

Dollar values of benefits for both Postal Service clerks and the private sector are determined from data on benefit costs per hour worked. BLS data on Employer Costs For Employee Compensation, March 2000, are used for full-time workers in the private sector. These are data collected in the ECI wage and benefits survey, which have been published in the form of dollar costs per hour annually since 1986. The ECI benefit cost data cover full-time workers in all occupations in all establishments in the private nonfarm economy.

To make the comparison with the private sector, Postal Service benefit cost data for bargaining unit clerks were organized into the same expenditure categories used by BLS for the ECI and were expressed on a cost per straight-time hour basis.

The Postal Service annual wage is the average straight-time wage for all bargaining unit clerks in FY 2000 (\$18.0683) multiplied by 2,080 hours. The private sector wage for comparable workers is computed relative to the Postal Service wage, based on the wage premium in log points. The premium is subtracted from the log of the postal wage, and the dollar amount of the private wage is then calculated: $\exp(\ln(\$37,582) - 0.212)$ equals \$30,403. Private sector benefit costs are calculated from this figure.

Pension and insurance benefits include: pension and retirement plans; savings and thrift plans; social security; life insurance; health benefits; and sickness and accident insurance. For Postal Service clerks, this includes contributions to CSRS, FERS, and the Thrift Savings Plan, as well as health benefits and life and other insurance costs. It excludes retiree annuitant benefit costs such as the COLA and health benefit costs of CSRS annuitants who retired after 1986 because payments to retirees are excluded from the ECI data. Also excluded are all costs (principal and interest) associated with the underfunding of the CSRS retirement fund.

Paid leave includes vacation time, holidays, sick leave used and other leave. Supplemental pay benefits, payments for workers' compensation, and unemployment insurance were excluded from the analysis. These are costs to the Postal Service.

Table 6.
Postal Service Clerk Premium for Total Compensation

	Annual Cost per Full Time Employee	
	Postal Service Bargaining Unit Clerks	Private Sector
Wages	\$37,582	\$30,403
Wage premium	\$7,180 (21.2%)	
Pension & insurance benefits	\$11,533	\$6,508
Wages plus pension & insurance benefits	\$49,115	\$36,911
Wage & non-wage benefit premium	\$12,204 (28.6%)	
Paid leave	\$6,674	\$2,919
Wages plus pension & insurance benefits and paid leave	\$55,789	\$39,830
Total premium	\$15,960 (33.7%)	

Percentages are calculated as 100 times the difference in the logs of postal clerk and private sector amounts to show the size of the postal-private gap independent of which of the two is used as the base.

Totals may not add to components due to rounding.

See notes to Table 5 for sources and methods.

from 21.2 percent for wages alone to 28.6 percent. Moreover, the method of constructing this measure almost certainly understates the premium. Relatively few private plans provide payments to annuitants, whether pension or health benefit related, while the Postal Service has liberal and costly programs for retirees. Such costs are not included in the wage and benefits premium calculation.

The second component of benefits – paid leave – increases the postal premium still further. Not only are postal clerks paid a premium, they are also given generous amounts of paid leave. Paid leave amounts to 17.8 percent of salary for bargaining unit Postal Service clerks, which raises the total compensation cost of a postal worker to \$55,789. For private sector workers, paid leave costs

only 9.6 percent of salary, which raises the average private sector worker's cost only to \$39,830. The effect of the additional amount of paid leave is to raise the postal clerk premium from 28.6 percent including just pension and insurance benefits to a total compensation premium of 33.7 percent.

In prior sections of the report, in addition to the CPS analysis, two measures of the postal clerk wage premium were introduced – the CPS-DOT premium and the New Hire Survey premium. In contrast to the 21.2 percent CPS-only bargaining unit premium, we found a CPS-DOT postal clerk premium of 35.7 percent and a New Hire Survey postal clerk premium of 31.8 percent.

In Table 6, we showed that the postal clerk total compensation premium is 33.7 percent. This figure is built based on postal clerk benefits and the bargaining unit CPS wage premium of 21.2 percent. We can also calculate a postal clerk premium off of the CPS-DOT. Starting with the clerk wage premium of 35.7 percent, we obtain a CPS-DOT clerk total compensation premium of 48.2 percent. We do not calculate a total compensation premium from the New Hire Survey wage premium because we do not have separate data on benefit costs for postal new hires or data on benefits received in their private sector jobs.

The major conclusion of this section is that the postal total compensation premium is large. Based on the CPS-only estimate, the total compensation premium for clerks is a substantial 33.7 percent – a pay discrepancy of \$15,960 per annum. Evidence from the CPS-DOT, O*NET, and the New Hire Survey suggests that our CPS-only analysis understates the true premium, making 33.7 percent a minimum estimate of the clerk compensation premium. The comparability standard of the PRA specifically includes “compensation and benefits.” By this measure, total compensation for postal clerks far exceeds that required by the PRA.

VII. Quit Rates, Applicant Queues, and Job Security

Up to this point in our report, evaluation of the postal premium has been based on direct evidence on wages and compensation for postal and private sector workers. We have found that postal clerks receive a substantial compensation premium relative to similar private sector workers employed in jobs with similar characteristics, and that new hires receive large wage gains upon entering postal employment. Moreover, job security from a low risk of layoff is an important job attribute valued by workers, but not accounted for in our premium analysis.

If we are correct that a large premium exists, two implications follow. First, postal workers should have relatively low quit rates. Second, the Postal Service should find it easy to hire qualified workers to fill job vacancies. In addition, if both of these factors can be shown then the converse is also true – unusually low quit rates and long employment queues imply the existence of a compensation premium.

A. Quit Rates in the Postal Service

The quit rate is a measure of the attractiveness of a job, since all other things equal, dissatisfied workers quit their jobs. The quit rates of APWU craft employees are shown in Table 7 for the fiscal years 1987 to 2000.⁴⁴ The quit rate in 2000 was 1.9 quits per hundred workers per year – down slightly from an average of about 2.9 during the late 1980s and up slightly compared with the mid-1990s. The APWU quit rate of 1.9 per hundred in 2000 is a weighted average of the quit rate for full-time clerks and for part-time flexibles. As expected, the quit rate is lower for full-time workers (1.2 percent) than for part-time flexibles (5.0 percent), reflecting the fact that within firms new workers are far more likely to quit than experienced workers.⁴⁵

44. The quit rate is the number of voluntary resignations during the year per 100 workers on the rolls.

45. For theory and evidence on turnover behavior, see Henry S. Farber, "Mobility and Stability: The Dynamics of Job Change in Labor Markets."

Table 7
Postal Service APWU Quit Rates

	Full Time	PTF	FT-PTF Average
2000	1.2	5.0	1.9
1999	1.2	6.9	2.3
1998	1.1	6.8	2.2
1997	1.0	5.3	1.7
1996	0.9	4.5	1.5
1995	0.8	4.6	1.3
1994	0.7	4.4	1.1
1993	0.7	2.6	1.0
1992	0.9	2.5	1.2
1991	1.0	3.9	1.5
1990	1.5	4.8	2.1
1989	1.8	6.7	2.8
1988	1.7	7.4	2.9
1987	1.6	7.7	3.0

Notes:

Annual number of quits per 100 employees, fiscal years. Quit rates represent voluntary separation. Data do not include employees who retire or are terminated.

Source: U.S. Postal Service, Human Resources Information Systems.

Because quits are highly concentrated among new hires, it also follows that overall quit rates will vary directly with the level of hiring. A year with a high level of new hires will correspond to a year (or two) of high quits. For example, in 1998 and 1999 there were 26,103 and 17,398 APWU new hires. PTF quit rates for those years were 6.8 and 6.9 per 100 workers. In 2000, APWU new hires fell to 8,335 and the PTF quit rate fell to 5.0 per hundred.

It is also not surprising that quit rates increase during a period when economy-wide unemployment is low and jobs are plentiful. Despite the lowest unemployment rates in several decades, postal clerk quit rates were remarkably low in 2000 – a testament to what remains a sizable compensation premium. And quits are particularly low among full-time postal clerks, with a rate of only 1.2 quits per hundred workers during 2000. Full-time quit rates show less variability over time

than do PTF quits, being a bit less than 1 percent during years in which labor markets display weakness (the early 1990s) and a bit above 1 percent in years with tight labor markets (1998-2000).

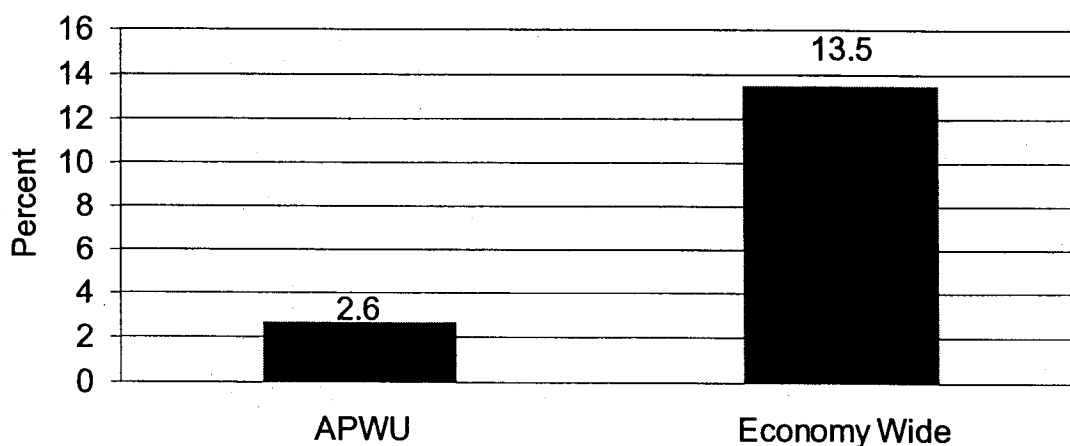
Postal Service quit rates are amazingly low when compared to private sector quit rates. Unfortunately, the Bureau of Labor Statistics discontinued its quit rate series in the early 1980s due to funding reductions. In 1981, the last year the data were collected, the quit rate (for manufacturing workers) was over 15 percent, whereas the quit rate for full-time Postal Service workers was 1.5 percent. During the 1970s, quit rates averaged over 20 percent. Since manufacturing industries during the 1970s were highly unionized and high wage industries, the quit rates of the Postal Service were extraordinarily low even by the standards of high-wage private sector industries.

In order to compare current postal clerk and private sector quit rates, we have constructed a “turnover” rate for the private sector. The Bureau of National Affairs publishes a quarterly report entitled Job Absence and Turnover presenting results from a survey of private and public employers (approximately 200-300 firms per quarterly survey). The BNA turnover rate measures permanent separations including quits, retirements, and firings, but excludes all forms of layoffs and the departure of temporary workers. A simple downward adjustment to the BNA figures based on estimated retirement rates from the March 2000 CPS produces an approximate economy-wide “turnover” rate, excluding retirement, that is 13.5 exits per 100 workers in fiscal year 2000. In order to make an “apples-to-apples” comparison, “turnover” rates were calculated for the Postal Service that include not only quits, but also “removals” and other separations (primarily from death and disability).

For FY 2000, the postal “turnover” rate for the APWU was 2.6 exits per 100 workers (see Figure 5). Here again, this is an exceptionally low rate, given the lowest unemployment rate in several decades. The APWU turnover rate of 2.6 percent was well below the economy-wide average of 13.5 percent. Although quit rates can be low for reasons other than a high wage, it is hard to

imagine that quit rates as low as those in the Postal Service could exist absent a substantial compensation premium.⁴⁶

Figure 5
Employee Turnover Rates: 2000



B. Employment Registers and Applicant Queues

Employment register data also attest to the extraordinary attractiveness of postal jobs. Postal jobs are filled off employment registers at local postal districts. Postal registers are closed much of the time because of the large number of applicants. Local officials determine when to open the registers and when to “freshen” the registers (typically individuals remain on registers for no less than two and no more than three years). One postal exam is used for placement on employment registers for seven different postal crafts, including both the clerk and letter carrier positions. An applicant

46. In jobs where career compensation is competitive, quit rates can sometimes be low if much of workers' compensation is “deferred” until late in a career. Deferred compensation typically occurs through generous pension benefits and high rates of wage growth over time. If quits were low because of deferred compensation, however, then money wages should be particularly low for young workers, offsetting what will be higher wages and pension benefits later in life. Yet wage rates for young postal workers are not low. In fact, postal premiums are particularly high for young workers, as seen by the very large wage gains realized by postal new hires, documented in Section V.

may ask to be placed on more than one register. In some cases, local offices will open up registers for some crafts but not others.

Thousands of persons who are not successful in getting hired immediately remain in line for a future opening. Nationwide, the numbers on the registers are huge. As of July 2001, the number on clerk registers was 486,168.

Despite a tight national labor market, postal registers are closed most of the time.

Nationwide, there are 616 Lead Register Offices located in 85 administrative postal districts. In FY 2001, less than one-third of all register offices (185 out of 616) opened their employment registers once or more during the year.⁴⁷ Of the 185 offices that did open their registers, most (173) were open for only a single time period; only 12 offices nationwide were open more than a single period of time, all of these being open for two periods. And among all register openings during 2001, 49 were for one week or less (there is a minimum five-day opening period), 86 for two weeks or less, and 133 for three weeks or less. Although considerably fewer registers were open in 2001 than in, say, 1998 (185 versus 288 in the earlier year), registers that were open in 2001 tended to be open for a longer period. This is no doubt the result of the relatively tight labor market during this period, so that the flow of applicants following a register opening occurred at a rate slower than in 1998. With the economy slowing down considerably since FY 2001, applicant flows currently are likely to be greater than what is evident in our data.⁴⁸

47. In FY 2000, only 124 of the 616 offices (or one-in-five) opened their registers during the year. Corresponding figures for earlier years are 235 offices in FY 1999 and 288 offices in FY 1998.

48. By any measure, the magnitude of postal applicant queues is large. They are not so large as they were in July 1995. There are two principal reasons that the registers are smaller today than in 1995. The obvious reason is the impact of what is a robust national labor market and historically low rates of unemployment. The more important reason is that more of the registers were open immediately prior to our 1995 arbitration report than to the current report. Because of a new national testing exam, all district offices were required to open their registers and test in 1994, and consequently the number of applicants on the registers remained very high in 1995. This reinforces our point that the size of the registers is limited by the time period over which they are open. Indeed, the size of registers in 1995 provided a better measure of the demand for postal jobs than does the size of registers today, given the rather restricted time over which registers have opened for applications.

Because there is a national salary scale for postal workers, the postal premium is largest in smaller low-wage areas and lowest in larger high-wage markets. Even in high wage labor markets, however, the Postal Service has had no serious problem attracting large numbers of qualified applicants for most clerk jobs. For example, even in five of this country's highest-wage large metropolitan labor markets – Boston, Minneapolis-St. Paul, New York, Washington, and San Francisco – postal registers were large. In July 2001, the number of persons on the clerk registers in postal districts in these areas was as follows: Boston – 2,864; Minneapolis-St. Paul – 969; New York (Triboro and NYC service districts) – 55,359; San Francisco – 3,970; and Washington (Capitol and Northern Virginia service districts) – 4,899 (U.S. Postal Service, Human Resources Information Systems).

In short, even in the highest wage labor markets, postal compensation is sufficiently high to attract large numbers of qualified workers. Were postal registers open more frequently during the year the length of these queues would be even larger. As a result, local offices have not deemed it necessary to adopt "activist" recruiting policies common in the private sector. As does the evidence on quit rates, information on postal applicant queues confirms our conclusion that the postal compensation premium is large and that postal employment is extremely attractive to workers, as compared to private sector alternatives.

C. Job Security in the Postal Service and the Private Sector

The above analysis focuses on quit rates and turnover rates – rates that exclude employer initiated discharges and layoffs. In this section we turn to the extraordinary high job security that postal workers have enjoyed. High job security is one of the strongest of the many positive features of the postal job.

We are unable to include an estimate of the value of job security in our wage and compensation premium estimates. In a competitive labor market, workers are willing to accept lower wages, all else the same, in jobs with a low risk of layoff. If the wage analysis were able to account

for the value of job security, the postal premium would be higher than the figures reported in previous chapters.

The Postal Service combines premium compensation with zero unemployment for bargaining unit workers. Postal clerks have not suffered from cyclical or seasonal layoffs, nor have they faced substantial uncertainty regarding future income. This is not true in other high wage, unionized industries. Moreover, workers who permanently lose unionized jobs are likely to find their next job in the nonunion sector, because new job creation occurs at a faster rate in the nonunion sector than in the union sector. This is yet another reason why a direct comparison of postal wages with wages in the union sector would be misleading: a currently unionized worker cannot count on earning the union premium because of the higher likelihood of permanent job loss and a subsequent need to find employment in the nonunion sector.

Unemployment rates reflect net changes in jobs and may give the wrong impression that there is relatively little job loss in any given month or year. One measure of job risk is the BLS' new measure of mass layoff events, which looks at the number of layoff events resulting in 50 or more initial claims for unemployment insurance benefits within a single establishment. As shown in Table 8, in the year 2000, with the national unemployment rate at a multi-decade low 4.0 percent, there were 15,050 events of mass layoffs involving approximately 1.8 million workers, approximately 3 percent of the workers covered by the BLS survey.⁴⁹ For the twelve months ending August 2001, the number of events increased to 18,584, involving 2.25 million workers.

The Bureau of the Census' special supplements to the CPS provide another view of the risk of job loss in the private sector by recording the extent of job displacement. In contrast to employment at the Postal Service, where risk from permanent displacement has been virtually nonexistent, displacement risks elsewhere in the labor market have been substantial. Table 9 shows the two-year probabilities of displacement by industry. In the last two-year periods that contained a

49. Covered employment data by establishment size, based on quarterly employer reports in the ES 202 program, are provided in the annual publication, Employment and Wages, Annual Averages.

Table 8.
Mass Layoffs in Private Industries

Year	Mass Layoff Events	Initial Claimants
1996	13,731	1,404,019
1997	14,203	1,473,795
1998	15,132	1,698,175
1999	14,217	1,511,059
2000	15,050	1,770,467
2001*	18,584	2,251,812

Notes:

*September 2000 - August 2001 (July and August figures are preliminary).

Mass Layoff Events represent 50 or more initial claims for unemployment insurance benefits filed against an establishment during a 5-week period, regardless of duration. Initial Claimants are persons from establishments with a mass layoff event who file notice of unemployment to initiate unemployment insurance. Source: USDOL, Bureau of Labor Statistics, Mass Layoff Statistics Program, <http://www.bls.gov/mlshome.htm>.

Table 9.
Probability of Permanent Job Loss Over a Two-Year Period

	1982-83	1990-91	1996-97	1998-99
Private Sector	8.9	8.3	5.7	5.2
Mining	24.2	16.1	5.5	14.4
Construction	15.2	22.5	10.0	9.0
Manufacturing	12.9	9.6	6.1	6.4
Transportation	10.1	7.8	5.3	3.0
Communication & Utilities	3.4	3.0	5.3	4.2
Other Private	5.7	6.5	5.2	4.5
Bargaining Unit Postal Clerks	0.0	0.0	0.0	0.0

Note: Displacement rates are for full-time workers ages 20-64. The rates represent permanent job losses due to a plant or company closing or move, slack work, or a worker's position or shift being abolished. The rates represent the probability of losing a job at least once over a two-year time period. Calculations are by the authors using data from the CPS Displaced Worker Surveys for January 1984 and 1992 and February 1998 and 2000 and the methodology outlined in Henry S. Farber, "The Incidence and Costs of Job Loss: 1982-91," Brookings Papers on Economic Activity: Microeconomics, 1:1993. Postal clerk displacement rates: U.S. Postal Service, Human Resources Information Systems.

recession, 1982-83 and 1990-91, private sector rates of displacement were quite high, over 8 percent.⁵⁰ This means that during a recession period fully 8 percent of private sector workers face permanent job loss. During 1998-99, the most current rates available, private sector displacement was just under 5.2 percent. Given the low unemployment rates in these years, the risk of permanent job loss is very much a factor in private sector industries.

The large difference in job security between the private sector and the Postal Service is well known. Although it is difficult to place a precise value on this job security for workers, it is likely to be considerable. The postal clerk compensation premium estimates in this report would be even larger were we able to properly account for the value to workers from job security (the absence of both seasonal and cyclical unemployment and no permanent job displacement). Further support for the existence of a large compensation premium is the evidence in this chapter of exceedingly low quit rates by postal clerks and the ease with which the Postal Service can hire new employees, even in high wage labor markets.

50. The CPS Displaced Worker Surveys (DWS) have been conducted once every two years, beginning in January 1984. The DWS ask workers if they have suffered a job loss either from a plant or company closing or other permanent layoff at any time during the previous three years (five years in the older surveys). Following Farber, we report displacement rates over the two years prior to each survey.

VIII. Tracking Arbitrator Kerr's "Moderate Restraint"

In this section, evidence is presented regarding the change in postal compensation relative to compensation in the private sector. We focus on changes in wages and in total compensation over the last five contract periods in order to evaluate whether the mandate of "moderate restraint" established by Chairman Kerr in 1984 has been followed. Dr. Kerr stated that since the premium:⁵¹

"did not develop over-night. . . it would be a mistake to try to correct [it] too hastily. This award interprets moderate restraint as a slowing of wage increases, as against the private sector, by one percent a year or for three percent in total over the life of this contract. In the opinion of the chairman, this does not dispose of the problem. Moderate restraint may also be necessary in future years to approximate the guideline of comparability as established by Congress."

The slowing of wage increases by one percent a year (ECI-1) provides a standard that can be used in evaluating postal and private sector wage increases since the Kerr award.

A. Methodology of Tracking the Postal Premium

The best private sector measure of wage change for use in comparing postal wage increases with the private sector of the economy is the Employment Cost Index (ECI) published by the Bureau of Labor Statistics.⁵² The ECI was developed to meet the need for a comprehensive, timely measure of changes in employee compensation that is unaffected by changes in the occupational composition of the labor force. The most commonly cited ECI is the index for private industry wages and salaries.

51. Clark Kerr, Chairman, "Opinion and Award," Arbitration Proceedings, United States Postal Service and National Association of Letter Carriers, AFL-CIO, and American Postal Workers Union, AFL-CIO. December 24, 1984.

52. Although the CPS data provide the best estimate of wage premiums, we do not use the CPS to measure year-to-year changes in relative postal wages. One reason is that the confidence interval around our estimated premium is at least 1.5 percentage points in either direction. In addition, there is some divergence in the rate of wage growth evident in the CPS and the ECI. Economy-wide wage growth shows up as being faster using the ECI than the CPS, perhaps due to changes in worker mix or differences in the earnings measures. Hence, tracking with the ECI suggests greater closing of the postal premium than would be evident using the CPS. For a comparison of wage growth using alternative data sets, see Barry Bosworth and George L. Perry. "Productivity and Real Wages: Is There a Puzzle?" Brookings Papers on Economic Activity (1:1994): 317-44.

However, ECI publications also include sub-measures for detailed occupational, industrial, and geographic wage changes and corresponding indexes for total compensation, including benefits.

Postal wage changes are compared here both with the private industry ECI and with an employment cost index covering private sector production and nonsupervisory workers, which we refer to as ECIX since it excludes managerial and most professional and technical occupations. While the overall private sector ECI is the most widely cited measure of wage trends, the ECIX series, by excluding managers and professionals, more accurately tracks wage trends for private sector workers who are most comparable to postal craft employees.⁵³

The postal series used in the comparison are the straight-time hourly earnings of all bargaining unit clerks.⁵⁴ This series is closest in construction to the ECI wages and salaries indexes. Postal clerk and private sector wage changes are compared in Table 10 by converting the wage changes during each postal contract period since 1984 to a compound annual rate and subtracting the percentage increase in private sector wages from the percentage increase in postal wages.⁵⁵

B. The Kerr Standard and Contract Results: 1984 Through 2000

The 1984 contract largely achieved the closing of the postal/private wage gap targeted by Arbitrator Kerr over the 1984 contract period. Private sector wages as measured by the ECI increased

53. The wages of professionals and managers increased more sharply over the 1980s than did the wages of any other major occupational group. As a consequence, the private sector ECI excluding professionals and managers increased more slowly during that period than did the overall private sector ECI. Growth rates in the ECI and ECIX have been more similar in recent years.

54. This includes part-time flexible and regular employees, but excludes casuals. Part-time flexibles differ from full-time bargaining unit workers in that they are disproportionately new hires in the new entry-level steps. In addition, part-time flexibles are career-track workers. Casuals are not members of the bargaining unit and are paid lower wages than bargaining unit workers. These workers have only short term job status and do not expect progression from casual to part-time flexible or to full-time status.

55. The series created in Table 10 provide evidence on the direction of change in the premium, but relative wage changes do not necessarily translate into changes in the premium. The ECI and postal payroll wage data do not control for skill or other characteristics of the workers. The premium, on the other hand, is calculated from a wage regression controlling for a set of worker characteristics. In addition, changes in the parametric structure of the wage equation used to estimate premiums prevents any reading of relative wage changes into automatic changes in the underlying premiums. Changes in the parametric structure will occur, for example, when there are changes in the rate of return to education or experience. Finally, given the estimation procedures in constructing the premium, there is a statistical confidence interval around the point estimate of the premium.

0.9 percent per year faster than postal clerk wages over this period. However, the closing of the Postal Service wage gap did not occur in the exact manner that Kerr anticipated. Private sector wage

Table 10
Average Annual Growth Rates of Wages:
Postal Bargaining Unit Clerks
Compared with Private Sector Measures

Contract Period Cal. Year:Quarter	ECI (1)	ECIX (2)	Union ECI (3)
<u>Percentage Wage Increase</u>			
1984:2-1987:2			
Postal Service Clerks	2.8	2.8	2.8
Private sector	3.7	3.5	2.6
DIFFERENCE	-0.9	-0.7	0.2
1987:2-1990:3			
Postal Service Clerks	5.1	5.1	5.1
Private Sector	4.0	4.0	2.9
DIFFERENCE	1.1	1.1	2.2
1990:3-1994:4			
Postal Service Clerks	2.2	2.2	2.2
Private sector	3.1	3.0	3.2
DIFFERENCE	-0.9	-0.8	-1.0
1994:4-1998:4			
Postal Service Clerks	1.5	1.5	1.5
Private sector	3.5	3.4	2.8
DIFFERENCE	-2.0	-1.9	-1.3
1998:4-2000:4			
Postal Service Clerks	4.0	4.0	4.0
Private sector	3.7	3.5	2.9
DIFFERENCE	0.3	0.5	1.1

1984:2-2000:4			
Postal Service Clerks	2.9	2.9	2.9
Private sector	3.6	3.4	2.9
DIFFERENCE	-0.7	-0.5	0.0

Notes to Table 10:

The BLS Employment Cost Index (ECI) for wages and salaries in private industry measures changes in labor cost (straight-time hourly earnings) in all establishments in the private nonfarm economy with an index employing fixed occupational weights. It controls for compositional shifts in the labor force across 2-digit industries and 3-digit occupations. Both full-time and part-time workers are covered. The ECI uses an occupational classification system based on the Census Bureau's Standard Occupational Classification system, which identifies approximately 500 3-digit occupational categories. Data are aggregated to nine occupational categories for publication.

Postal Service bargaining unit wages are average hourly straight-time wages from USPS, National Payroll Hours Summary Report, various issues.

To avoid distortions due to the timing of Postal COLA and general wage increases, a two-quarter average of wages at the end of each contract period is used. Thus, the postal wage increases shown for 1984:2-2000:4 are a comparison of the average wage in the third and fourth calendar quarters of 2000 with the average wage in the first two calendar quarters of 1984. The compound annual growth rate is computed from quarterly series on wage changes using the formula:

$$g = 100 * [(w_n/w_0)^{(4/n)} - 1]$$

where:

- g is the compound annual growth rate, in percent,
- w_n is the value of the wage index in quarter n, the end of a period,
- w_0 is the value of the wage index in quarter 0, the start of a period.

Private sector wage series are:

- Column 1: BLS Employment Cost Index for wages and salaries in private industry.
- Column 2: BLS Employment Cost Index for wages and salaries of production and nonsupervisory workers in private industry.
- Column 3: BLS Employment Cost Index for wages and salaries of union employees.

growth was slower than projected by the forecasts available to Kerr, and average wages for the Postal Service slowed over this period due to the new entry-level steps that the Kerr award introduced and the fact that hiring at these lower entry wages was very strong.

The difference between the standard of moderate wage restraint and the actual results of any particular contract can be explained by a number of factors. First, the awards are forward looking and hence are based on a forecast of private sector wages and prices. During some contract periods economic forecasts of wage and price inflation rates have been somewhat higher than actual rates, resulting in less restraint than might have been intended. In addition, contract awards have sought to achieve moderate wage restraint through a combination of measures, such as introducing new entry steps, as well as through moderate general wage increases, and the impact of these measures can be difficult to predict beforehand. Finally, the difficulty of predicting the impact of automatic step increases for continuing workers and the reduction in average wages due to attrition among postal workers with high wages can introduce a gap between the standard of restraint and the actual effect of any award.

The voluntary settlement reached in 1987 resulted in a widening of the postal-private wage gap, thereby erasing the closing achieved by the Kerr award. Postal clerk wages increased at an annual rate of 5.1 percent over this contract period, outpacing the private sector wage growth of 4.0 percent. This was due in part to slower private sector wage gains over the contract period than were forecast at the time of the settlement. However, clerk average wage growth also accelerated as hiring slowed and there were fewer workers at entry-level wages at the same time that the large cohorts of workers hired in the previous three years were moving up the steepest part of the wage scale.

In the 1991 interest arbitration, Chairman Mittenthal, based on the weight of the evidence, reaffirmed the existence of a wage premium and the need for a contract to reestablish a standard of moderate restraint:⁵⁶

56. Richard Mittenthal, Chairman, "Opinion and Award," Arbitration Proceedings, United States Postal Service and NALC, AFL-CIO, and APWU, AFL-CIO, June 12, 1991, pp. 16,18.

"Notwithstanding the efforts of the Kerr board to establish a principle of 'moderate restraint,' a wage premium still exists. Hence the need for continued 'moderate restraint' still exists . . . [T]he general wage increase imposed by this award is truly 'moderate.' The percentages involved ... are lower than those found in any previous agreement."

Despite a significant slowing of private sector wage growth over the period 1990-1994, Mittenenthal's award did achieve further closing of the postal-private wage gap for bargaining unit clerks. Private sector wages increased at a pace of only 3.1 percent per year, but clerk wage increases slowed to 2.2 percent. Over the term of the Mittenenthal award, much of the slowing of the average postal wage was a result of the introduction of transitional employees, the introduction of new lower entry steps, and the early-out program in 1992 and 1993.

The net effect of the 1984, 1987, and 1991 contracts was an increase in postal wages that lagged the growth of private sector wages. Moderate wage restraint was achieved, but it fell short of Kerr's goal of holding postal wage growth to 1 percentage point less than wages in the private sector. In 1995, after reviewing evidence put before him in the NALC interest arbitration proceedings, Chairman Stark acknowledged the need for continued moderate wage restraint and vigilance in achieving that goal. He stated:⁵⁷

"In reaching the conclusions set forth here, I have recognized the need, particularly in light of automatic grade, step, and COLA increases, for wage increases even more modest than those contained in the award of the Mittenenthal Board."

In the 1995 APWU interest arbitration award, Chairman Clarke accepted the Stark pattern and in addition reduced the night shift differential. In the subsequent NPMHU interest arbitration proceedings, the Postal Service presented an overview of the wage comparability findings by arbitrators since Clark Kerr that has been summarized above. Chairman Vaughn concluded:⁵⁸

... [the Stark and Clarke awards] "recognized the continued existence of a Postal 'wage premium'. [They] continued, and provided additional restraint to, the restraint originally imposed by the Kerr Panel." ... "I am persuaded by the evidence presented by the Postal

57. Arthur Stark, Chairman, "Opinion of the Chairman," Interest Arbitration Proceedings, United States Postal Service and NALC, AFL-CIO, Aug. 19, 1995, p. 38.

58. M. David Vaughn, Chairman, "Decision," Interest Arbitration Proceedings, United States Postal Service and National Postal Mail Handlers Union, April 24, 1996, p. 7.

Service that its NPMHU-represented employees continue to enjoy a wage premium compared to their counterparts in the private sector. . . ”

The contract award of the Vaughn interest arbitration panel included the Stark/Clarke wage provisions.

The 1995 arbitration awards succeeded in slowing the growth of postal wages relative to the private sector. This was due to a combination of lump sum payments in lieu of general increases in years 1 and 3 of the contract, modest general increases in years 2 and 4, and a re-basing of the COLA formula to year 2 so that there was no adjustment for inflation during the first year of the contract. Between 1994 and 1998, postal clerk wages increased at a rate of 1.5 percent per year, or 2.0 percent slower than the private sector ECI. Consequently, while earlier contract periods fell short of the Kerr standard, the Stark/Clarke arbitration awards made up for some of the past shortfalls.

In 1998 the Postal Service and the APWU reached agreement on a two-year contract. With continuation of the COLA and general wage increases of 2.0% in 1998 and 1.4% in 1999, it was expected that this contract period would show a continuing moderation of the increase in postal clerk wages relative to the private sector. However, as Table 10 shows, average clerk wages grew at a 4.0% average annual rate – outpacing the 3.7% increase in the private ECI. Clerk average wages grew somewhat faster than anticipated over this period in part because hiring slowed sharply so that fewer clerks were added at entry-level wages at the same time that the large number of clerks hired during 1997-1999 were receiving the large step increases that are part of APWU wage schedules.

In the 1999 arbitration of the NALC contract, arbitrator Fleischli put “aside the dispute as to whether there exists a ‘postal premium’.” The pay upgrade issue was “deemed to be of controlling importance,” and he viewed the pay upgrade issue “as involving an internal inequity, not comparability with the private sector.”

Since 1984, the wages of bargaining unit clerks have increased at an average annual rate of 2.9 percent, while private sector wages as measured by the ECI increased at an annual rate of 3.6

percent. Thus, since the 1984 Kerr Award the Postal Service has achieved a closing of the wage gap with the private sector of 0.7 percent per year.

Part of this closing of the wage gap between postal and private sector workers as measured by the private sector ECI is due to the large wage increases received by private sector professionals and managers over this period. When professional and managerial occupations are removed from the private industry ECI to form the ECIX, the amount of closing of the wage gap for clerks is found to be 0.5 percent per year.

C. The Trend in Postal versus Private Sector Union Wages

In column 3 of Table 10, changes in clerk wages are compared with union wages in the private sector. Under the PRA standard of comparability, union wages are clearly not the standard. They are tracked in this section only as a consequence of the fact that union wage premiums throughout the economy have been a structural problem contributing to the decline in union jobs. The private sector union series employed is the BLS's ECI for union employees.⁵⁹

The result shown in Table 10 is that the closing of the postal pay premium exactly matches a closing of the private sector union wage premium with respect to the overall private sector. Postal wage increases closely tracked union wage increases during the term of the Kerr award, exceeded private sector union wage increases during the terms of the 1987 contract and the most recent contract, and lagged union increases during the terms of the Mittenenthal and Stark/Clarke awards. Over the 16 years 1984:2 through 2000:4, both clerk wages and private sector union wages increased by the same 2.9 annual percentage rate.

In fact, postal bargaining unit wages have tracked union wage increases over a longer period. There is considerable evidence of a buildup in the private sector union premium during the 1970s through the early 1980s, largely paralleling the period when the Postal Service wage premium

59. In previous reports on postal/private wage comparability, we employed the BLS series on "effective wage adjustments in major collective bargaining contracts" (Major Agreements) to measure union wage trends. However, the BLS discontinued publishing the major Agreements series in 1996.

increased. As shown by comparing the union ECI with the private sector ECI in Table 10, private sector union wage increases slowed compared to the overall private sector over the 1980s and 1990s. Over the entire period, the closing of the union premium versus the private sector has been 0.7 percent per year. Thus, private sector collective bargaining demonstrated its own version of moderate wage restraint.

D. Trends in Postal and Private Total Compensation

In this section, we broaden the comparison of trends in postal and private sector pay to encompass nonwage benefits as well as wages. In establishing the comparability standard for postal pay, the Postal Reorganization Act refers to "compensation and benefits." Nonwage benefits are a large and growing part of employers' labor costs in the private sector as well as the Postal Service. Indeed, for much of the past 15 years benefit cost increases have outpaced wages. Data comparing the growth of total compensation (wages plus benefits) for postal clerks with the private sector on a contract by contract basis are presented in Table 11. The comparison is again based on data from the Employment Cost Index (ECI) published by the Bureau of Labor Statistics.⁶⁰

The patterns of changes in total compensation generally parallel the results for wages alone described above. During much of the 1990s, following the 1990 and 1994 arbitrated contracts, there existed moderate *compensation* restraint, with outcomes approximately equal to ECI-1. Total compensation of postal clerks, however, substantially outpaced compensation in the private sector during the 1987 and 1998 contracts. Thus, the bottom line of Table 11 is that the extent of closing of the postal-private gap over the entire period since the Kerr award is much smaller for total compensation than for wages alone. During this period, total compensation for postal clerks lagged the ECI by only 0.2 percent per year (0.1 percent when the private sector measure is the ECIX – excluding managers and professionals).

60. Postal Service total compensation is the cost of straight-time wages, paid leave, pension and insurance costs (excluding contributions to the CSRS retirement fund deficit) per straight-time hour worked.

Table 11
Average Annual Growth Rates of Total Compensation:
Postal Bargaining Unit Clerks
Compared with Private Sector Measures

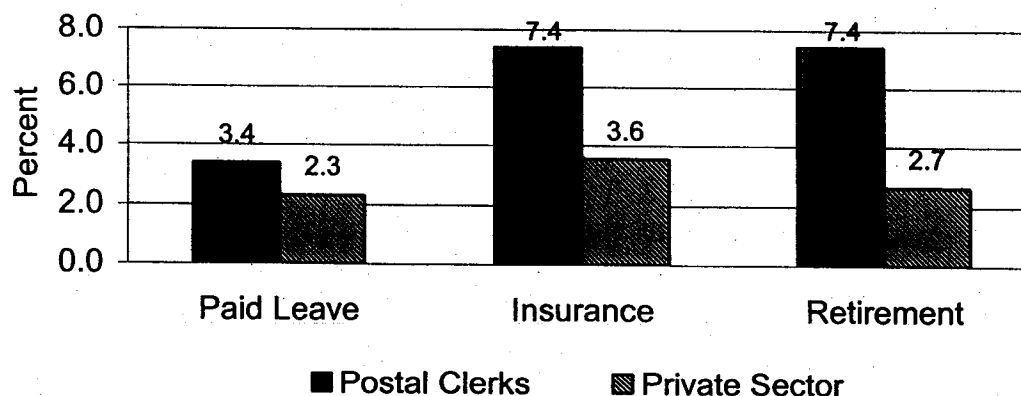
Contract Period Cal. Year:Quarter	ECI (1)	ECIX (2)	Union ECI (3)
<u>Percentage Compensation Increase</u>			
1984:2-1987:2			
Postal Service Clerks	3.4	3.4	3.4
Private Sector	3.7	3.5	2.6
DIFFERENCE	-0.3	-0.1	0.8
1987:2-1990:3			
Postal Service Clerks	6.8	6.8	6.8
Private Sector	4.6	4.7	3.8
DIFFERENCE	2.2	2.1	3.0
1990:3-1994:4			
Postal Service Clerks	2.5	2.5	2.5
Private Sector	3.7	3.6	4.1
DIFFERENCE	-1.2	-1.1	-1.6
1994:4-1998:4			
Postal Service Clerks	1.9	1.9	1.9
Private Sector	3.1	3.0	2.6
DIFFERENCE	-1.2	-1.1	-0.7
1998:4-2000:4			
Postal Service Clerks	4.8	4.8	4.8
Private Sector	3.9	3.7	3.4
DIFFERENCE	0.9	1.1	1.4

1984:2-2000:4			
Postal Service Clerks	3.6	3.6	3.6
Private Sector	3.8	3.7	3.3
DIFFERENCE	-0.2	-0.1	0.3

Compensation changes based on two-quarter moving averages. See notes to Table 10.

The growth of Postal Service benefits has outpaced the private sector since the mid-1980s in all broad categories – insurance, pension, and paid leave. Because the Employment Cost Index database does not include series on the growth of individual components of benefits, we use related data from the BLS annual Employer Costs for Employee Compensation reports for this purpose.⁶¹ The ECEC data are first available for 1986. A comparison of the average annual growth rates of benefits of bargaining unit clerks with the private sector from 1986 to 2000 based on these data is presented in Figure 6. The Postal Service's cost per hour worked of insurance and pension benefits for clerks have grown at more than double the rate of the private sector, while clerks' paid leave costs have outpaced the private sector by a smaller margin.

Figure 6
Growth of Benefit Costs Per Hour Worked: 1986-2000
(Average Annual Rate)



The cost of insurance benefits for postal clerks (primarily health insurance) rose very sharply in the late 1980s (rising from \$0.77 to \$1.70 per hour worked between 1986 and 1992). These costs stabilized over the next six years as the Valtin award of 1993 achieved some increase in employee

61. The ECEC data provide a snapshot of the structure of compensation in March of each year but, unlike the ECI, these data are not free from the influence of employment shifts among occupations and industries.

cost sharing, moving in the direction of private sector practice. But between 1998 and 2000, insurance benefit costs were up 18% -- more than double the private sector increase.

Pension benefit costs for postal clerks (including savings & thrift and social security, but excluding contributions to the principal of the CSRS retirement fund deficit) show a similar pattern over this period. They increased sharply between 1986 and 1992 (from \$1.22 per hour worked to \$2.45). The increase in pension costs abated for two years following the postal reorganization of 1992, but since 1994 the growth of postal pension benefit costs has again steadily outpaced private sector pension costs.

As shown in Table 5 (Section VI), postal clerks enjoyed an 82.7% premium in paid leave benefits relative to comparable private sector workers in 2000. This huge gap has increased only slightly during the last 14 years. Since 1986, the Postal Service's cost of paid leave per hour worked for clerks has gone up at annual rate of 3.4%, while private sector costs increased 2.3% per year. A higher incidence of use of sick leave has pushed up postal costs.

The PRA directs that postal workers be provided with the benefits of the federal retirement system and certain other fringe benefits. However, this does not mean that the cost of providing these benefits can be ignored when assessing whether the PRA's mandate for comparability of postal compensation with the private sector is being achieved. In 1984, Arbitrator Kerr recognized the existence of a postal wage premium and the need for moderate restraint in future wage increases to reduce it. Although success in realizing this objective has been uneven in the contract periods since Kerr's finding, on balance some moderation in postal wages has been achieved -- wage growth for postal clerks averaging 0.7 percent per year less than the increase in the ECI (and 0.5 less than the ECIX). However, the evidence on postal benefits presented here indicates that the wage moderation achieved has nearly all been dissipated by explosive growth in benefit costs for postal clerks that has far outpaced comparable costs in the private sector. As a result, the growth rate of total compensation for bargaining unit clerks has lagged private sector compensation growth since 1984 by only 0.2% per year.

IX. The Collective Bargaining Context

A. Introduction

Collective bargaining in the Postal Service takes place in the context of collective bargaining trends in the overall economy. The postal unions have favored a "union-only" standard where postal bargaining unit jobs are compared only to union jobs in the private sector. This is not the standard of comparison that follows from the PRA, which mandates a comparison of postal compensation with that in the private sector. But a brief analysis of the union sector is useful for the lessons that it holds for the Postal Service. We learned in the prior section that for much of the period since the early 1980s, private sector unions have been voluntarily negotiating collective bargaining contracts embodying moderate restraint, in much the same way that Arbitrator Kerr recommended for the Postal Service in 1984.

In this section we focus on the fact that the overwhelming trend in the unionized private sector has been one of increased competition that has led to unprecedented declines in union employment and membership, and declining market share and lower profitability among unionized companies. The discussion is based in part on an academic literature examining the relationship between unions and economic performance.⁶²

62. See Peter D. Linneman, Michael L. Wachter, and William H. Carter, "Evaluating the Evidence on Union Employment and Wages," Industrial and Labor Relations Review, October 1990, Michael L. Wachter and William H. Carter, "Norm Shifts in Union Wages: Will 1989 Be a Replay of 1969?" Brookings Papers on Economic Activity, (1989:2), Barry T. Hirsch, Labor Unions and the Economic Performance of Firms, Kalamazoo, Mich.: Upjohn Institute for Employment Research, 1991, and Barry T. Hirsch, "Union Coverage and Profitability among U.S. Firms," Review of Economics and Statistics, May 1991. Recent work includes Bernt Bratsberg and James F. Ragan Jr., "Changes in the Union Wage Premium by Industry – Data and Analysis," Kansas State University, 2001, Henry S. Farber and Bruce Western, "Round Up the Usual Suspects: The Decline of Unions in the Private Sector, 1973-1998," Industrial Relations Section, Princeton University. Working Paper #437, April 2000, Richard B. Freeman, "Spurts in Union Growth: Defining Moments and Social Processes," National Bureau of Economic Research Working Paper 6012, April 1997, and Peter Kuhn, "Unions and the Economy: What We Know; What We Should Know," Canadian Journal of Economics, November 1998.

B. The Evidence on Union Employment in Private Industry

The fact of an enormous decline in union employment is widely known. Roughly 1 in 3 wage and salary workers belonged to unions in the late 1950s. As shown in Table 12, that figure dropped to 1 in 4 private sector workers by the early 1970s and to 1 in 6 by 1983. Today, only 1 in 11 private sector workers belong to unions.

Table 12
Union Membership in the Private Sector

Year	Employed Union Members		Percent of Union Members in Heavily Unionized Industries**
	Number (millions)	Percent of Private Wage and Salary Employment	
1973	15.0	24.2	40.8
1983	12.0	16.5	30.1
1990	10.3	11.9	22.7
1995	9.4	10.3	20.8
2000	9.1	9.0	18.5

** Percent of wage and salary workers who are union members in mining, construction, durable goods manufacturing, and transportation and public utilities.

Sources:

BLS, Employment and Earnings, January issues, 1974, 1984, 1991, 1996, 2001.

Barry Hirsch and David Macpherson, Union Membership and Earnings Data Book: Compilations from the Current Population Survey (2001 Edition) (Washington: Bureau of National Affairs, 2001), Table 1b.

During the 1960s and 1970s, the absolute number of union workers remained steady or grew slightly because of rapid growth in the size of the total labor force. But private sector union membership has declined in absolute numbers in recent years. There were approximately 15 million union members employed in private industry in the early 1970s. By 1983, at the end of the twin recessions of 1980 and 1981-82, that figure stood at 12.0 million. In 1990, after 6 years of

uninterrupted economic expansion and job growth, the absolute number of union workers had declined to 10.3 million. And by 2000, following a long period of economic expansion and low unemployment, private sector union membership had fallen to 9.1 million workers.

Union employment is in decline even in the traditional union strongholds in the industrial sectors. Whereas 41 percent of all workers were unionized in construction, mining, durable manufacturing, and transportation and public utilities in 1973, this had declined to 30 percent unionized in 1983 and 23 percent in 1990. Union density is currently only 18.5 percent in these “heavily” unionized sectors. In most of the traditionally heavily unionized industries, there is now a substantial presence of nonunion workers, and hence competition between union and nonunion firms. Most U.S. employment is concentrated in sectors with even lower levels of unionization. The trade, finance, and service sectors of the economy account for 65 percent of total private sector wage and salary employment. In the combined wholesale and retail trade sectors, 4.7 percent of workers are union members. Union density in the combined finance, insurance, and real estate sectors is only 1.6 percent. And in the diverse service sector of the economy, 5.6 percent of the workforce are union members.⁶³

The decline in private sector unionization is likely to continue. Changes in union membership reflect the difference between the flow of new union members and the flow of union employment losses. Normal “churning” in the U.S. economy leads to the creation of many new jobs, typically “born” unorganized, and to high levels of job loss in both the union and nonunion sectors. In order for union membership to be maintained, unions must organize as many new workers as there are lost union jobs. In order to maintain union density, unions must increase union membership at a rate equal to the rate of growth in employment. Union organizing of workers and establishments in the private sector has not been sufficient to maintain either membership or density.

63. BLS, Employment and Earnings, January 2001.

In a careful analysis of union membership in the private sector, Henry Farber and Bruce Western examine election data from 1940 through 1998. The number of NLRB union certification elections fell sharply in the early 1980s, from a level of about 8,000 a year in 1980 to about 4,400 in 1990. The level of election activity declined a bit through the later 1980s and early 1990s, and increased modestly after the mid-1990s. Votes cast in these elections fell by more than half over the same period, from about 500,000 a year to just over 200,000 a year. The larger percentage decline in number of votes than elections reflects the declining average size of the election or workplace unit over time. Union win rates in certification elections declined steadily, from a win rate of about 80% in 1940 to about 50% by 1975. Since 1975, the win rate has hovered near or below 50% in most years. Moreover, not only has the average size of election units fallen over time, union win rates are lower in larger workplace units. And this size gap in win rates has increased over time. Although good data are not available, most evidence indicates that even among the union elections wins, fewer have culminated in a first contract between the union and employer (estimates are that roughly a third of union wins fail to lead to a first contract).⁶⁴

In short, the number of union elections has declined, the average size of the election unit has fallen, the average win rate has dropped, particularly for large units, and first contracts have become less likely following a union win. Even a substantial increase in the number of new workers organized and first contracts obtained will not stabilize private sector union density at its current level. Private sector union density will continue to decline until it reaches a lower, sustainable level. Earlier work by Richard Freeman using data on union "stocks" and the "flows" of workers in and out of union membership showed that union coverage in the economy was likely to continue its decline before an eventual steady state is achieved at under 5 percent union density. The recent work of

64. The NLRB publishes election data in their Annual Report, but with a considerable lag. The most recent evidence available is for the year 1999. In that year there were a total of 210,387 votes cast in 3,585 representation elections of which 1,811 were won by unions. Of those 3,585 elections, nearly 80 percent were in the following sectors: 919 were in manufacturing, 298 in construction, 402 in trade, 694 in transportation, communication, and utilities, and 517 in health services.

Farber and Western concludes that the sustainable level of private sector union density will be well below 5 percent.⁶⁵

In short, absent major and unanticipated changes in worker and voter attitudes toward unionization, coupled with public policies that would facilitate more rapid rates of union organizing, unionization in the private sector is likely to assume an even smaller role than we observe today.

C. Union Wage Premiums and the Decline of Union Employment

The widely recognized decline in union employment is readily evident in published government figures. Less well known are the causes for this decline. Linneman, Wachter, and Carter and, more recently, Bratsberg and Ragan, have shown that part of the decline in union employment in the private sector was due to increases in the private sector union wage premium, which began around 1969 and peaked in the early 1980s.⁶⁶ They demonstrate that the largest declines in union employment were indeed concentrated in the sectors with increasing union wage premiums. The increase in relative union-to-nonunion wages changed the competitive cost position of unionized firms, making it more difficult for them to compete in what were increasingly competitive product markets. In recent years, the decline in union density would have been even greater had it not been for some moderation in the size of union wage premiums.⁶⁷ That being said, union wage premiums in the U.S. remain high by international standards, providing at least a partial explanation for more rapid union decline than observed in other Western economies.⁶⁸

65. Gary N. Chaison and Dileep G. Dhavale, "A Note on the Severity of the Decline in Union Organizing Activity," Industrial and Labor Relations Review, April 1990, Richard B. Freeman, "Contraction and Expansion: The Divergence of Private Sector and Public Sector Unionism in the United States," Journal of Economic Perspectives, Spring 1988, and Farber and Western, "Round Up the Usual Suspects."

66. Peter D. Linneman, Michael L. Wachter, and William H. Carter, "Evaluating the Evidence on Union Employment and Wages." For evidence and discussion of changes in the private sector union wage premium, see Bratsberg and Ragan, "Changes in the Union Wage Premium by Industry," and Barry T. Hirsch and Edward J. Schumacher, "Private Sector Union Density and the Union Wage Premium: Past, Present, and Future," Journal of Labor Research, Summer 2001.

67. Bratsberg and Ragan, "Changes in the Union Wage Premium by Industry."

68. David G. Blanchflower and Richard B. Freeman, "Unionism in the United States and Other Advanced OECD Countries," Industrial Relations, Winter 1992.

Other labor market researchers have found related results that document the economic decline of unionized firms with high premiums. Hirsch, for example, finds that unionized firms have significantly lower profitability than nonunion firms do, and that such firms respond by reducing their R & D and new capital investments. Similar results are obtained by Fallick and Hassett, Becker and Olson, and Bronars, Deere, and Tracy.⁶⁹ Bronars and Deere conclude that "equity losses [of firms] are the greatest in industries where union wage gains are the highest."⁷⁰ An alternative way to interpret the finding that unions decrease profitability is that union wage increases are not offset by corresponding increases in worker productivity.

Even more direct evidence on the link between unions and employment decline is found in studies finding employment growth to be significantly lower in unionized plants and among establishments in highly unionized industries, or following union election wins.⁷¹ Freeman and Blanchflower conclude from their cross-country analysis that:

"If our comparative analysis is correct, the decline in U.S. union density is not an aberration [due to political factors and the decline of manufacturing] but is structurally rooted in what U.S. unions do on the wage front. ... the increased [wage] differentials that developed in the 1970s are, in our view, a major liability to the future development of unionism. If private sector unions continue to pressure for higher wages and if the economic and political environment remains more or less the same, U.S. unionism will continue to decline, with density in the private sector dropping below double digits by the mid- to late 1990s."⁷²

69. Barry T. Hirsch, Labor Unions and the Economic Performance of Firms, Brian E. Becker and Craig A. Olson, "Unionization and Firm Profits," Industrial Relations, Fall 1992, Bruce C. Fallick and Kevin A. Hassett, "Investment and Union Certification," Journal of Labor Economics, July 1999, Stephen G. Bronars and Donald R. Deere, "Unionization, Incomplete Contracting, and Capital Investment," Journal of Business, January 1993, and Stephen G. Bronars, Donald R. Deere, and Joseph S. Tracy, "The Effects of Unions on Firm Behavior: An Empirical Analysis Using Firm-Level Data," Industrial Relations, October 1994.

70. Stephen G. Bronars and Donald R. Deere, "Union Representation Elections and Firm Profitability," Industrial Relations, Winter 1990, p. 15. See also John M. Abowd, "The Effects of Wage Bargains on the Stock Market Value of the Firm," American Economic Review, September 1989, and Richard S. Ruback and Martin B. Zimmerman, "Unionization and Profitability: Evidence from the Capital Market," Journal of Political Economy, December 1984.

71. Jonathan S. Leonard, "Unions and Employment Growth," Industrial Relations, Winter 1992, Timothy Dunne and David A. Macpherson, "Unionism and Gross Employment Flows," Southern Economic Journal, January 1994, and Robert J. LaLonde, Gérard Marschke, and Kenneth Troske, "Using Longitudinal Data on Establishments to Analyze the Effects of Union Organizing Campaigns in the United States," Annales d'Économie et de Statistique No. 41/42, 1996.

Many other factors besides the wage premium have also been at work in lowering union employment. Changes in technology have shifted demand away from production workers and toward information-based white-collar workers. Shifts in worker preferences appear to make workers less inclined to support union organizing. The political and legal climate that became less favorable toward unions in the early 1980s has remained largely the same since then.

Perhaps the most important other factor that has impinged upon union employment has been the increasing pressure for cost competitiveness in U.S. product and labor markets. Increased competitiveness has arisen from the growth in the internationally traded goods sector, the related increase in the flows of investment capital abroad, changes in the regulatory climate in what traditionally were highly unionized sectors (e.g., transportation and communications), and from a host of financial market pressures on management to hold down labor (and other) costs.

The increase in product market competition and declining union coverage in most major industries have the effect of raising the cost of any given level of a union wage premium. For over a century it has been recognized that unions are more likely to flourish when the economic climate allows unions to take "wages out of competition." A wage premium that may have had little impact on firms in the 1960s, when competitors faced similar wage costs and consumer options were limited, could be expected to have a much larger effect today on a firm's profitability, market share, and employment levels. Although management's attitude toward unions shifted with the political climate, it is certainly the case that the negative impact of unions on profitability has influenced the extent of management opposition to union organizing drives.⁷³

These research findings suggest that the moderate wage restraint shown by private sector unions in recent years is not a transitory event. Rather, it is a response to a competitive market

72. Blanchflower and Freeman, "Unionism in the United States and Other Advanced OECD Countries," p. 76.

73. Morris M. Kleiner, "Intensity of Management Resistance: Understanding the Decline of Unionization in the Private Sector," Journal of Labor Research, Summer 2001.

environment and losses in union jobs. Given the increased competition in United States labor and product markets and the continuing existence of a union premium, an immediate end to the decline in union jobs is unlikely. But "moderate restraint" among private sector unions does limit what would otherwise be even larger employment losses and a less competitive unionized sector.

D. The Academic Debate on Unions and Productivity

Twenty years ago, when the decline in union membership and employment was gaining momentum, there was a serious debate over the causes of the decline. Freeman and Medoff provided some of the popular background for the debate by arguing that unions had two faces – a noncompetitive monopoly face and a competitive collective voice face in which unions reflected the median preferences of its membership. A potential result of unions' collective voice face was a productivity advantage in union relative to nonunion companies.⁷⁴

At least in the economic profession, the weight of the evidence has largely decided the issue. A recent survey has measured the views of labor economists at top universities. In response to the question: "What is your best estimate of the percentage impact of unions on the earnings of their average member?" the median response was 15 percent and mean response 13.1 percent. In response to the question: "What is your best estimate of the percentage impact of unions on the productivity of unionized companies?" the median response was zero and mean response 3.1 percent. A recent working paper providing a "meta-analysis" of 71 independent empirical studies published on unions and productivity likewise concludes, "if all the available evidence is pooled together, measures of central tendency indicate a near zero association between unions and productivity."⁷⁵ In brief, what we are calling the union wage premium is a noncompetitive factor that is increasingly difficult to sustain in more competitive markets.

74. See Richard B. Freeman and James L. Medoff, What Do Unions Do?, Basic Books, 1984.

75. See Victor R. Fuchs, Alan B. Krueger, James M. Poterba, "Economists' Views about Parameters, Values, and Policies: Survey Results in Labor and Public Economics." Journal of Economic Literature, September 1998, and P. Laroche, "What Do Unions Do to Productivity? A Meta-Analysis," Working Paper, Universite Nancy 2, 2001.

As the implications of the empirical facts have spread, more academics are developing models of the future in which there can exist both traditional labor unions and new forms of independent worker organizations. But unlike the current environment, noncompetitive compensation premiums cannot be a key part of sustainable unionism. Collective bargaining can retain its central role, with unions measuring and expressing the collective preferences of its members, subject to the constraint that resulting contracts must be sustainable in a competitive economics environment. A wage advantage for organized workers occurs only to the extent that collective voice and the labor relations environment can create value added within the workplace.⁷⁶

Absent the development of a new model of unions, the unions of the future are likely to represent unique or niche sectors of the economy, where competition is severely limited, as in state or local governments, or where there have been few successful inroads of new firms, as in airlines and communications.

E. Implications for Postal Service Wage Setting

Our discussion and the data on private sector union membership presented in Table 12 have important implications for postal bargaining. First, the history of the Postal Service wage premium parallels developments in the private sector. As noted above, high union wage premiums during the 1970s in the private sector were associated with subsequent market share losses to unionized firms and lower union employment. The 1970s were also the decade when the postal wage discrepancies

76. Some authors have emphasized the inherent tension between voice and monopoly, since workplace organizations that enhance worker voice are also likely to "tax" company profits. See Richard B. Freeman and Edward P. Lazear, "An Economic Analysis of Works Councils," in Joel Rogers and Wolfgang Streeck, eds., Works Councils: Consultation, Representation, and Cooperation in Industrial Relations, University of Chicago Press, 1995. For recent views (ranging from hopeful to skeptical) on the emergence of value-added worker organizations, see Saul A. Rubinstein, "Unions As Value-Adding Networks: Possibilities for the Future of U.S. Unionism," Journal of Labor Research, Summer 2001; Samuel Estreicher, "Freedom of Contract and Labor Law Reform: Opening Up the Possibilities for Value-Added Unionism," New York University Law Review, June 1996; Richard Freeman and Joel Rogers, What Workers Want, Cornell University Press, 1999; and Bruce E. Kaufman, "The Employee Participation/Representation Gap: An Assessment and Proposed Solution," University of Pennsylvania Journal of Labor and Employment Law, Spring 2001.

noted by Arbitrator Kerr developed, as shown by Wachter and Gillula.⁷⁷ Faced with competitive pressures and weakened bargaining power, private sector unions during the 1980s and 1990s have sharply reduced the use of strikes and moderated wage demands, as evident in a slower growth in union than in nonunion compensation.

Moderate wage restraint has thus emerged among private sector unions in response to competitive pressures and the continuing losses in union employment. Although union wage settlements uptick from time to time, the trend is still toward further compression of union and nonunion wage restraints. In the Postal Service moderate restraint vis-à-vis the private sector, as dictated by the language of the PRA, depends in part on the decisions of postal arbitrators. Continued restraint would also mirror what has occurred among labor unions in the economy's private sector.

Second, the decline in union membership in the private sector, including the traditionally heavily unionized sectors, means that the Postal Service primarily competes or partners with nonunion firms. The partners in the worksharing programs initiated by the Postal Service are largely nonunion private sector firms. Although there is little documented evidence on unionization in presort bureaus, it appears to be very low. In alternate delivery the pattern is mixed. At Federal Express, delivery and sorting functions are nonunion. At UPS, the delivery function is fully unionized and consists mainly of full-time workers. Sorting is performed primarily by union workers, both part-time and full-time.

As discussed in the next section, postal markets are becoming more competitive and there is an increased likelihood that the Postal Service will experience a significant degree of deregulation over the next decade. In the more competitive markets of the future, the success of the Postal Service will depend increasingly on its ability to control its costs and develop a more competitive cost structure. The greater the degree of postal market deregulation and the greater the entry of new firms,

77. Michael L. Wachter and James W. Gillula, "Wage Comparability in the U.S. Postal Service: The Total Pay Premium, New Hire Results, and Changes in Product Market Competition," March 21, 1991.

the greater the likelihood that the postal markets of the future, including the markets in which the Postal Service operates, will be largely nonunion.

With postal deregulation on the horizon and with union membership and employment currently at 9 percent, the less reasonable is any claim that a relevant comparison group should be heavily or entirely made up of unionized firms.

X. Product Market Competition and Regulatory Issues

A. Background

As of today the Postal Service appears to have been spared the product market erosion suffered by unionized private sector firms that pay high wage and benefit premiums. The question is whether this is likely to continue? To answer that question, a few others have to be asked. First, how has postal employment performed since the PRA and during the period when the postal compensation premium was being established? Second, what factors have contributed to the health of postal employment in the face of a continuing high, albeit not increasing compensation premium?

A summary answer to these questions is the following. First, it is the case that postal employment is higher today than it was at the time of the PRA in 1971. However, during the 1970s, the decade when union wage premiums increased throughout the economy and in the Postal Service, postal employment declined. As can be seen in Table 13, whereas total postal employment was 741,216 in FY 1970, it was only 663,067 in FY 1979, a decline of nearly 80,000 jobs. At the time of the Kerr award in 1984 and the implementation of moderate wage restraint, employment was 672,849. Consequently, absent the implementation of moderate wage restraint, it is very possible that postal employment would be much lower today than is the case. Indeed, postal employment reached a peak in FY 1999.

The peak employment level of FY 1999 may not be surpassed for some time. There have already been slight declines in employment in both FY 2000 and FY 2001. And based on the rate increases and cost containment built into the R 2001-1 rate case filing, postal employment should continue to decline for another two years. An important question to ask is whether the decline between FY 1999 and the forecast for FY 2003 is simply a minor perturbation or the beginning of another material decline in postal jobs?

Secondly, many factors contributed to the growth in postal employment to record levels as late as FY 1999. From our perspective the key factors, besides the change in the postal compensation

Table 13
Number of Postal Service Workers

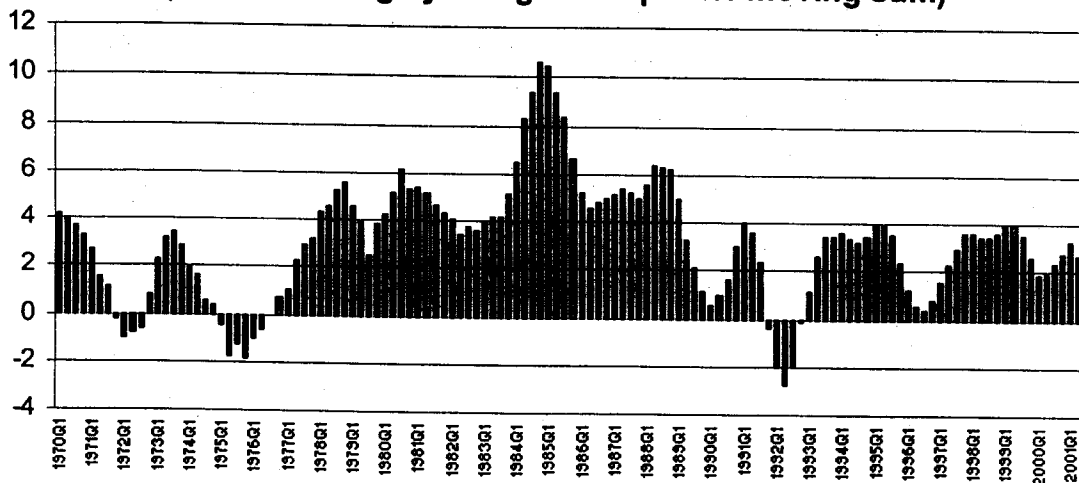
Fiscal Year	Total Employees	Total Career Employees
1969	739,002	
1970	741,216	
1971	728,911	
1972	706,400	
1973	701,051	
1974	710,433	
1975	702,257	
1976	678,949	
1977	655,097	
1978	655,567	
1979	663,067	
1980	666,823	
1981	670,239	645,100
1982	675,122	645,100
1983	678,845	647,400
1984	702,123	672,849
1985	744,490	704,807
1986	784,557	731,765
1987	790,557	750,808
1988		763,781
1989		763,743
1990		760,668
1991		748,961
1992		725,290
1993		691,723
1994		728,944
1995		753,384
1996		760,966
1997		765,174
1998		792,041
1999		797,795
2000		787,538
2001		775,903

Source: Annual Report of the Postmaster General, various years.

premium, are the following: continued monopoly protection in key mail markets, worksharing, changes in computing technology, the workings of economies-of-density, and the ability to maintain and flourish within a stable regulatory environment. These factors affect postal employment by impacting postal volume.⁷⁸ Consequently, it is useful to start our examination of these factors by looking at postal volume.

Figure 7 depicts the overall trends in postal volume growth. The fact that postal volume has increased over the years is due to the growth in the American economy, which regularly generates increases in bill presentment and payments, advertising, periodicals, and, with increases in population, personal messages as well. Postal volume growth is, in fact, closely related to the growth rate in the economy. This holds, however, only as long as monopoly protection prevents other firms

Figure 7.
Mail Volume Growth
(Percent change year ago of 4-quarter moving sum)



78. Worksharing increases postal volume by decreasing the effective cost of mail products. Its effect on employment works through both a substitution and an output effect. The substitution effect generates a negative effect on postal clerk employment because private mailers substitute their own clerks for postal clerks. The output effect generates a positive effect on total and clerk employment by keeping down postage rates and increasing the total amount of mail that moves through the mail stream. Given the enormous increase in postal employment that occurred immediately after the introduction of presort discounting, the overwhelming evidence is that the output effect and the market developments it facilitated, exceeded the substitution effect.

from entering and competing for mail volume. If the mail market were competitive, then increased volume at the industry level would go to the firm that offered the most value for the money charged. Today, the Postal Service has a significant amount of regulatory protection in First-Class Mail and in Standard mail. Over 90 percent of postal volume is in these two markets.

The trends in postal volume shown in Figure 7 can readily be divided into three periods. The first period runs from FY 1971 and ends in FY 1977 and is marked by sluggish postal volume growth. The second period, which begins in FY 1977 and ends in FY 1990, is a period of very rapid volume growth. The third period, which covers FY 1990 through the current date shows moderate volume growth.

B. Period 1, FY 1971 to FY 1977: Sluggish volume growth with rapid increases in relative postal prices and wages

As shown in Figure 7, overall postal volume growth was low from 1971 into 1977, averaging approximately 1.0 percent per year. Volume growth was below 1 percent in 1974 and 1977, and actually negative on a year-over-year basis in most of 1975. A sluggish economy, part of the stagflation experience of the United States, was a contributory factor to the sluggish volume growth, but this cannot be the sole or even principal factor. Although there was a severe recession at the time of the first oil price shock in 1973-74, there were also major downturns in both 1980 and then again in 1981-82, and these were periods of solid volume growth.

The key to the sluggish volume growth was a huge increase in the real postage rates. Between 1971 and 1978, the real effective price of First-Class Mail increased by approximately 50 percent. Part of this increase was due to the end of postal subsidies after postal reorganization. But the early- to mid-1970s was also the period of the buildup of union wage premiums across the economy and in the Postal Service. The result was sharp increases in postal prices, stagnation in postal volume, and an 80,000-employee decline in postal staffing levels.

In this environment, some of the mechanics of the regulatory system involving the Postal Service have a deleterious rather than a beneficial effect. As mentioned in the first section of this report, earlier theories of economic regulation favored rate of return regulation when there were significant economies-of-scale or size. In the Postal Service we can best describe this phenomenon as economies-of-density; that is, the cost savings from delivering more mail to each delivery point. With a complete end-point delivery system in place, significant unit cost savings can be realized if more mail can be delivered at each point. Whether economies are indeed realized depends on the rate of growth of mail volume and the rate of growth of delivery points. If, as a consequence of population growth and business growth, the number of delivery points increases by 1 percent per year, then volume growth below 1 percent would generate diseconomies of density while volume growth of over 1 percent would generate positive economies of density.

The result is a reinforcing cycle. If volume increases faster than the growth of delivery points, more mail is delivered at each delivery point and the economies-of-density work to lower the cost per unit of mail. As the cost of mail delivery declines, the Postal Service can delay postal price increases and allow the real cost of mail, that is, mail costs after inflation, to decline. This in turn generates a new increase in mail volume, setting off another round of increases of economies-of-density.

The reinforcing cycle can either be beneficial when mail volume is increasing or detrimental when mail volume is declining. In the 1970s, the cycle was detrimental. Higher wages meant higher prices. Higher prices meant lower volume per delivery point. Lower volume meant an unraveling of economies-of-density, further aggravating the pressure on postal prices.

Looking back to that period today, if there were a surprise, it would be that volume growth was not even more negatively affected. The explanation for this is instructive. During the early 1970s, the high cost of mail meant that there was very little cost-sensitive mail in the system. First-Class Mail and periodical mail amounted to over 70 percent of total volume. The mail mix today is different and more price sensitive than the mail mix of the 1970s.

All of this, of course, is dependent on an unyielding regulatory protection that prevents the entry of new firms that can compete on price or service. The mail product is not inherently insensitive to price. Elasticities of demand for USPS mail products would likely be much higher if mail markets were open to competition.

C. Period 2, FY 1977 to FY 1990: Rapid volume growth, the 1st computer mail revolution, worksharing, economies-of-density, and the Kerr award

Beginning in the late 1970s conditions began to turn. The second period, the period of rapid volume increases, begins during the stagflation of the 1970s, rockets through the recessions of 1980 and 1981-82, generates double-digit volume growth in the mid-1980s, before leveling off at extraordinary growth rates of over 4 percent per year. During this extended period, postal volume growth averaged 5.1 percent per year.

Certainly the end of stagflation and the return of reasonably strong economic growth were important factors in the recovery of mail volume. But to explain the extraordinary performance of mail volume we need to turn to a confluence of favorable factors that came together in the late 1970s and early- to mid-1980s.

First, the postal premium stopped increasing and then actually started to decrease. With labor costs at that time over 80 percent of total costs, nothing could reverse the decline in employment until the premium stopped increasing. Although the peak in the premium occurs in the 1970s, it is not until the Kerr award in 1984 that moderate restraint became an institutional concept. With a lid on price increases, the cornerstone was in place for a computer mail revolution in direct marketing and mass mailing.

1. The 1st computer/direct marketing revolution and worksharing

The unparalleled increases in mail volume during the mid-1980s, focused as it was in Standard mail, was due to a revolution in direct marketing and mass mailing. This marks the first computer driven revolution in the mail market. Using greatly improved computing technology that

could be purchased at sharply declining prices, companies made dramatic improvements in their ability to combine addresses and demographic characteristics to create lists and target inserts to the people most likely to respond.

Volume in Standard mail began to increase and change the postal mail mix. Between 1978 and 1990, Standard mail increased from only 28 percent of mail volume to over 38 percent of mail volume. *

This first computer mail revolution was greatly facilitated by the Postal Service's introduction of worksharing discounts in the late 1970s and early 1980s that reduced the total system cost to the advertiser of using mail as a medium. This made advertising through the use of Standard mail attractive, increasing the penetration of Standard mail in the overall advertising budgets of American business. Given the close tie between worksharing and labor costs, we give it particular attention here.

First, worksharing allowed for mailers to substitute their competitively paid workers for postal workers. Worksharing has three main components: presorting, prebarcoding, and drop shipping. In presorting, mailers can use their own employees, who are presumably paid competitive private sector wage rates, to replace higher cost postal labor. Given the existence of a significant Postal Service premium for total compensation, mailers can realize a large cost saving. In the case of presorted mail, the private sector sorts its own mail, replacing at least a part of the mail processing and collection systems, and uses the Postal Service's end-point delivery system. Introduced in the late 1970s, and expanded in the 1980s, presorting quickly achieved major inroads. Effectively, part of the mail sorting function has been "privatized" at a significant cost saving to postal customers. This fueled much of the mail growth in the late 1970s and 1980s.

Worksharing, by reducing the total cost of mailing, drives postal volume upward. Indeed, a remarkable feature of worksharing is that most of the increase in postal volume since 1977 has been in products affected by worksharing. As shown in Figures 8 and 9, worksharing, which started at

zero in 1976, now accounts for 47 percent of all First-Class Mail and most Standard mail.⁷⁹

Consequently, early concerns that worksharing would hurt postal employment, by shifting work to the private sector, have proved incorrect.

Comparing the value of the discounts on this presort and drop-ship volume with the volume variable cost for processing all First-Class Mail and Standard regular rate bulk mail provides one measure of the extent of "privatization" of postal functions.⁸⁰ The result, as shown in Figures 10 and 11, is dramatic. Of the total resources used to process and deliver this mail, approximately 15 percent in First-Class Mail and 50 percent in Standard bulk regular rate mail is purchased through discounts to mailers who choose to use their own labor and equipment, rather than through the Postal Service directly buying these resources.

2. Economies-of-density

All the pieces were in place for a beneficial, reinforcing cycle. Volume growth quickly quadrupled during the late 1970s, accelerating from 1 percent per year to 4 percent per year and then higher. With volume growth averaging 5 percent over the 1977 to 1990 period, huge economies-of-density were generated.

Mail volume per delivery point is shown in Figure 12. This figure neatly divides into the periods we are using. As anticipated, the low volume growth of the early 1970s resulted in a decrease in volume per delivery point; that is, diseconomies-of-density. The decline over this period is 8.6 percent or an annual decrease of 1.5 percent. In other words, in a seven-year period, the average mailbox was receiving nearly 8.6 percent less mail than it was at the beginning of the period. On the other hand, between 1977 and 1990, postal volume per delivery point increased from just over

79. Standard mail has always required a minimum amount of presortation, and hence the zero percent figure for 1976 must be understood in that context. In Figure 9, the growth refers to the additional worksharing that qualifies for a discounted price.

80. Volume variable cost is the estimate of the marginal cost associated with the volume going through the postal system. It differs from attributable cost, which is the estimate of the marginal cost plus "specific-fixed" costs as developed in accord with the PRC's practices, including any adjustments required by regulation.

Figure 8
Percentage of Pieces Discounted:
First-Class Mail

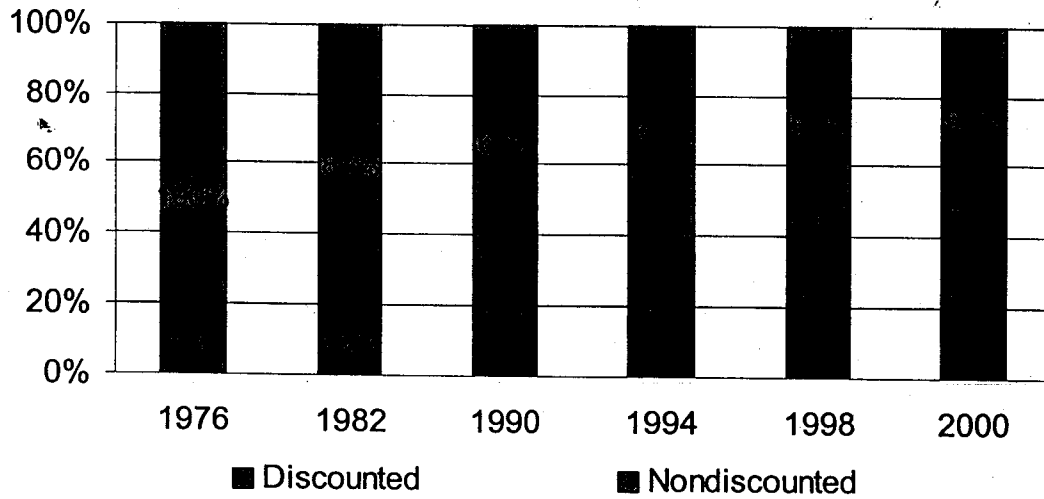


Figure 9
Percentage of Pieces Discounted:
Standard Mail

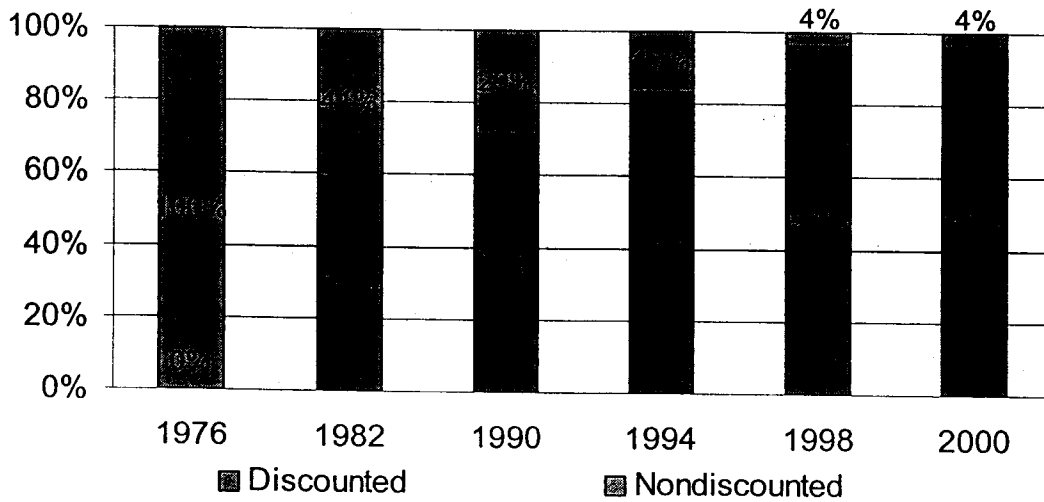


Figure 10
Worksharing Discount as a Share of Total Cost
of Providing First-Class Mail Service

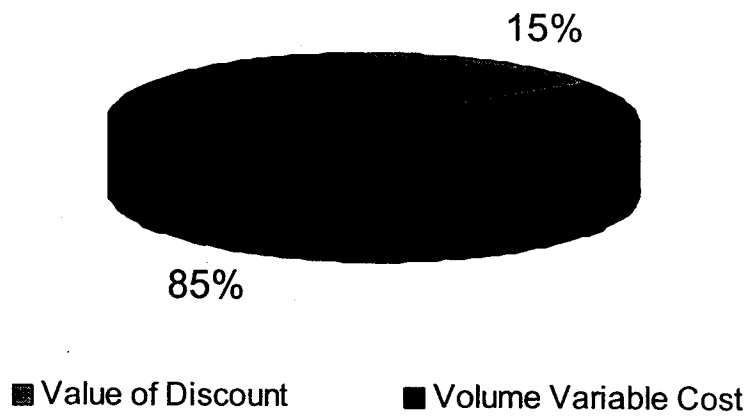


Figure 11
Worksharing Discount as a Share of Total Cost
of Providing Standard Mail Service

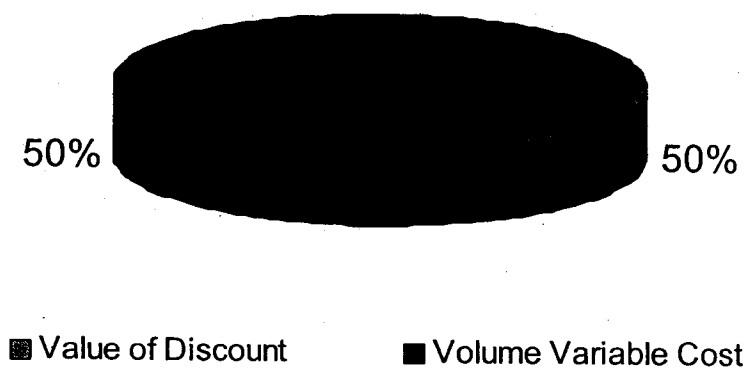
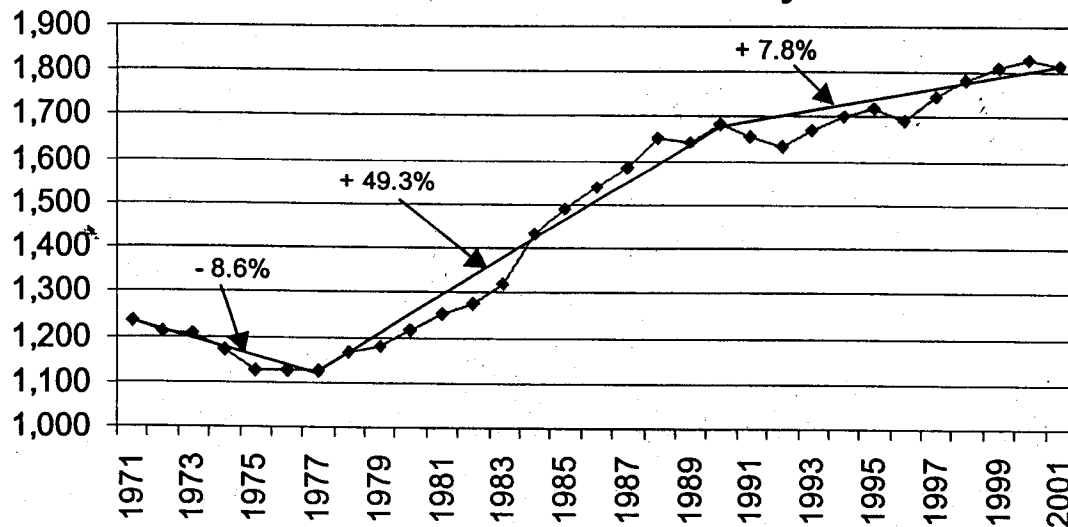


Figure 12
Annual Mail Volume Per Delivery Point



1,100 pieces per year to nearly 1,700 pieces per year or 49.3 percent, an annual growth rate of 3.1 percent. This is indeed a huge swing, from a loss of 8.6 percent to a gain of 49.3 percent.

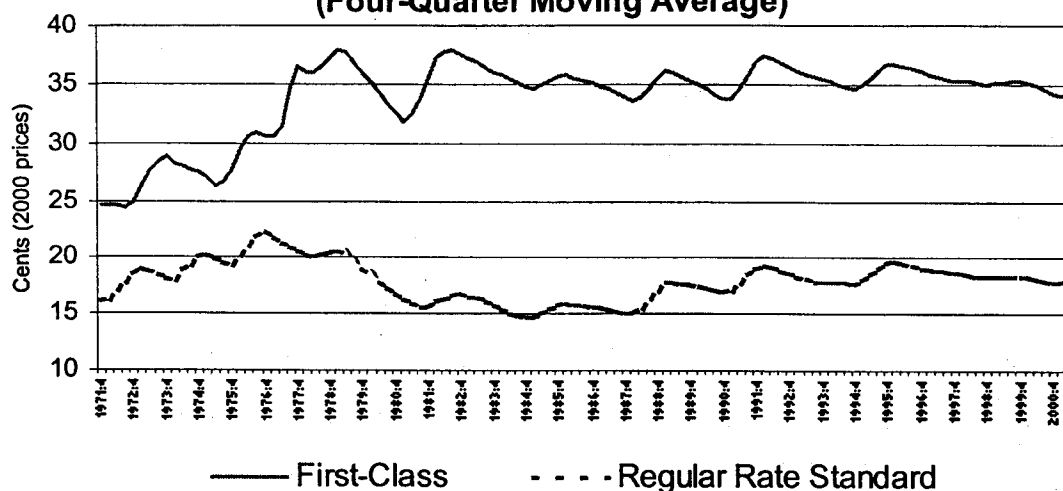
As mail volume slowed during the 1990s, but remained above 1 percent, the amount of mail delivered at each point continued to edge higher. But, whereas the gain from 1977 to 1990 was nearly 3.1 percent per year, the gain from 1990 through 2001 was only 0.7 percent.

3. Effective postage rates and increasing postal employment

Behind the sharp increases in mail volume was a drop in the price paid by mailers. This is shown in Figure 13. This chart shows revenue per piece for First-Class Mail and Standard A bulk regular rate mail in year 2000 prices.⁸¹ Effective real postage rates spike higher at each rate case and then drift lower until the next rate case. In this chart, the increase in the real price of postage that

81. Effective, real postage rates are calculated as the growth of revenue per piece of mail within a given class minus the economy-wide inflation rate. Calculated within class, this method allows for shifts between presort and regular mail, but does not allow for shifts between classes, for example, between First-Class and Standard mail. We use the term effective postage rates to designate this real or after-inflation revenue per piece measure of postal prices.

Figure 13
Deflated Revenue Per Piece
(Four-Quarter Moving Average)



results from each rate case is smoothed by showing a four-quarter moving average. The moving average also removes whatever seasonal pattern exists in effective real postage rates.

Figure 13 depicts an important and distinctive pattern. First-Class Mail real postage rates spiked higher in three large rate increases in the 1970s, peaking in 1979:1 at 37.8¢ (in 2000 dollars). The high inflation rates of the next two years drove the real price of First-Class Mail down, but the next rate increase returned the real price to the 1979 peak again in 1982:3. This remains the long-run peak. At this point, effective real postage rates had increased more than 50 percent from 1972 peak levels. In short, during the high inflation of the 1970s, First-Class postage rates increased even faster. The decline in postal volume shown in Figure 7 is not surprising in this context. In our second period, effective First-Class Mail rates fall as a consequence of the direct advertising revolution and worksharing.

Standard bulk regular effective, real postage rates show an even more prominent pattern. From 1971 through 1978, even after adjusting for inflation, effective postage rates increased by more than 30 percent. The dashed line peaks at the beginning of worksharing and the first computer revolution. Following the 1985 rate increase, real revenue per piece was down to 15.6¢, a real price

decline of 30 percent on a peak-to-peak basis, effectively erasing the real price hikes of the 1970s. Since 1985, effective postage rates for Standard mail have remained largely unchanged, drifting somewhat higher as a consequence of the large increase in Standard rates that occurred in 1991.

The result of the declining price of the mail product and the associated increases in volume was a recovery in postal employment. Indeed, this second period of our analysis, running from 1978 through 1990, saw an enormous increase in postal employment. The Postal Service changed its official count of postal employees during this period, moving from a measure of total employees to one of total career employees. Using the total employee count, postal employment increased by 190,000 individuals from 1978 through 1987. Using the total career employee count, another 10,000 employees were added by 1990.

D. Period 3, FY 1990 to FY 2001: Slowing volume growth, gains in moderate restraint, the end of the first computer mail revolution and the slowing of presort penetration

1. The 2nd computer mail revolution and the maturing of worksharing

Our third period, 1990 through the current date, is the period analyzed intensively by Peter Bernstein. The 1990s, like the 1980s, was a period of strong economic growth. By the end of the 1990s, as the Internet boom hit the economy, economic growth was stronger and inflation and unemployment lower than at any time during the 1980s. Even so, mail volume growth fell sharply, from 5.1 percent per year in our second period to 2.2 percent in the period beginning with 1990.

The major factor for the decline, according to Bernstein, was the development of technological competition. We agree. Indeed, the technological factor switches from a strongly positive factor in what we have called the first computer mail revolution, involving direct mail advertising, to a negative factor in what might be called the second computer mail revolution, involving the development of the Internet as an alternative vehicle for mail delivery.

Bernstein estimates that technological competition caused a 1.1 percent annual loss in First-Class Mail volume from 1996 to 2001. During this period, however, the factors that were causing some mail diversion were also causing the economy to generate higher growth rates. Consequently,

the impact of this emerging second computer mail revolution was not being fully felt until very recently.

Along with the shift in technology from a positive to a negative factor, the gains from worksharing had largely run their course during the 1990s. As can be seen in Figure 8, the percentage of First-Class Mail that is discounted continued to increase only slowly between FY 1998 and FY 2000. And as seen in Figure 9, there is little nondiscounted Standard mail in the mail stream. Similarly, worksharing discounts as a percent of the total cost of the mail service have been largely unchanged over the past several years.

In the 1990s, the structure of worksharing changed in response to the changing operating and cost characteristics of postal automation. In R90-1, discounts were introduced for prebarcoding, and in MC95-1, discounts for prebarcoding were increased while discounts for unbarcoded presorted mail were reduced. Since prebarcoding typically occurs alongside or in advance of presorting, mailers who are already presorting the mail have adopted prebarcoding as a logical extension of their mail processing. Similarly, since presort bureaus can buy the same automation equipment as the Postal Service, including barcode sorters and optical character readers, they can achieve a higher discount by providing mail already barcoded as well as presorted.⁸²

In its R90-1 rate filing, the Postal Service expanded the concept of providing discounts for "worksharing" by introducing discounts for Standard mail drop shipped to destination Bulk Mail Centers, Sectional Center Facilities (DSCF) and carrier stations (DDU). At the same time, discounts were introduced for parcel post drop shipped at Bulk Mail Centers. This program was expanded in

82. Originating mailers can sort their mail electronically before they print the pieces and apply barcodes while printing them. A financial institution can sort its address list in its computer rather than physically sorting addressed envelopes. The presort bureaus are an industry wedged between the originating mailers and the Postal Service. These service bureaus or presort houses offer a service whereby they collect and consolidate mail from various firms and presort it and prepare it in conformance with postal regulations. In the early 1980s, prior to prebarcoding, these presort bureaus relied on manual sortation or letter sorting machines. Today, presort bureaus are necessarily more capital intensive. However, since the discounts are estimated on postal labor costs avoided, and since the capital is the same, presort bureaus rely on their labor cost advantage to make a profit.

MC95-1, which introduced a new, lower rate class for "enhanced carrier route Standard mail." The drop shipping program was expanded in the R97-1 rate filing with enhanced discounts for parcel post drop shipped to Sectional Center Facilities and destination Delivery Units. Drop shipments bypass the Postal Service's incoming processing and transportation network.

Even with these changes, worksharing is unlikely to serve as an engine for postal volume growth for the foreseeable future as it has been in the past. Worksharing has matured, but it continues to provide a link between the cost of labor, the pricing of mail, and the extent to which private sector labor is used in place of postal labor.

2. Moderate restraint

As noted above, the Kerr award put a lid on the postal compensation premium. But it was not until the arbitration awards of the Mittenthal, Valtin, and Stark/Clarke panels that significant gains were made in reducing the postal compensation premium. In Table 11, we document that between 1990:3 and 1998:4, postal compensation increases trailed private sector compensation increases by slightly over 1 percentage point per year. Given the high labor intensity of the Postal Service, the moderation in labor costs had a large impact on postal prices and thus on postal volume. Consequently, although the direct advertising boom had ended and worksharing was maturing, this one factor remained strongly positive over much of the 1990s. However, the gains in moderate restraint ended with the 1998 contract.

Partially as a consequence of the 1990 and 1994 contracts, the effective price of First-Class Mail was close to the low points reached at the end of a rate cycle during the 1980s and 1990s (see Figure 13). Similarly, the effective price for Standard mail was roughly where it stood throughout the 1990s.

Assisting the moderation in postal prices were moderate gains in economies-of-density. During the period FY 1990 to FY 2001, volume per delivery point increased by 7.8%. See Figure 12. Although much lower than the 49.3% of the second period, it was enough to make the reinforcing cycle beneficial during this period.

The overall result of these various trends was to allow postal employment to continue to increase, although at a very moderate rate. Total career postal employment was at 760,668 employees in 1990. It peaked at 797,795 employees in 1999. As of FY 2001 it was 775,903.

A very large caveat needs to be introduced here. The low effective mail prices, although a boon for volume, generated an enormous annual loss. Consequently, the last of the favorable factors will also turn negative as the Postal Service enters FY 2002.

Table 14
A Tale of Three Periods

Period 1: 1971-1977

1. Stagnant Volume: +1% per year
2. Large Increase in Premium
3. Strongly Increasing Real Effective Postal Prices
4. Reinforced by Detrimental Cycle: -8.6%
5. Declining Postal Employment: -80,000 jobs

Period 2: 1977-1990

1. First Computer Mail Revolution, Worksharing
2. Booming Volume: +5.1% per year
3. Moderate Wage Restraint Established
4. Massive Reinforcing Beneficial Cycle: +49.3%
5. Declining Real Effective Postal Prices
6. Rising Postal Employment: roughly 200,000 jobs

Period 3: 1990-2001

1. Second Computer Revolution: Internet
2. Modest Volume Growth: +2.2% per year
3. Worksharing Matures
4. Compensation Premium: -1.1% per year, 1990-1998
5. Stable Effective Postal Prices
6. Reinforced by Beneficial Cycle: +7.8%
7. Postal Employment Peaks in 1999

Period 4: An Uncertain Future

E. Review of the tale of three periods. Has a fourth period begun?

In our tale of three periods, the 1971 to 1977 period was one where everything was working against the Postal Service. Postage rates were spiraling higher, the compensation premium was doing likewise, the direct advertising revolution and presort had not yet begun, and postal employment was in decline. The result was a detrimental reinforcing cycle as mail volume per delivery point declined putting further upward pressure on postage rates, leading to yet more downward pressure on volume and employment.

A confluence of positive factors reversed this downward cycle beginning in 1977. The first computer mail revolution coupled with the presort program led to large increases in postal volume. The postal compensation premium peaked and the Kerr award institutionalized moderate restraint. Real effective postage rates reversed direction and began to decline. The detrimental cycle was replaced with a beneficial one as volume per delivery point started to make large gains. This in turn put further downward pressure on postage rates, allowing for even greater volume increases.

The third period, running from 1990 to 2001, has been marked by generally positive factors – certainly when compared to the initial period in the 1970s. Important gains in moderate restraint of labor costs were scored between 1990 and 1998. Volume growth was reasonably strong, although the rate of growth was well below that of the 1980s. Some improvements were being made in the presort program. Effective postal prices continued to move within the range established in the 1980s. Postal employment continued to increase. Finally, the reinforcing cycle was beneficial because mail volume per delivery point continued to increase.

But what also marks this third period is that all these positive forces were looking increasingly shaky by the end of the period. The compensation premium was once again showing signs of increasing. The first computer mail revolution had run its course and a second computer mail revolution, with a much darker side (for postal volume and employment), appeared to be settling in. Gains from presort had largely run their course. Postal employment had declined for two consecutive

years with further declines likely. Although effective postage rates were still within their historical range, the Postal Service was generating a large deficit. The result was a large rate filing that would reverse the direction of effective postage rate trends.

Particularly troublesome is that the reinforcing cycle is showing signs of turning from beneficial to detrimental. FY 2001 marked a downturn in volume per delivery point. Although one unfavorable number does not make a trend, the likely effect of the current rate case, given the economic outlook, will be further declines in volume per delivery point. If this proves to be the case, the Postal Service will experience its first multi-year decline in volume per delivery point since 1976. Unfortunately, the beneficial cycle that has been in effect since then appears to be turning.

Finally, the stable regulatory environment that was enacted as the PRA in 1971 is showing signs of requiring substantial changes. It is to this topic that we now turn.

F. Postal Deregulation

The PRA has been largely successful. Although the Postal Service barely survived the first six years after passage, it has prospered for most of the remaining period. Under this regime postal employees have also done very well, escaping most of the turmoil that has affected the unionized sectors of the private economy.

An overhaul of the postal regulatory structure, however, is very likely to happen in the next several years. Recent events make for a very strong case. As Peter Bernstein points out, there is increasing evidence of mail diversion into the Internet and this diversion is likely to generate a volume decline in the near-term future. A downturn in volume, particularly if prolonged, would almost certainly lead to the kind of detrimental feedback effects that the Postal Service experienced in the early 1970s. A downturn in volume would trigger the diseconomies-of-density that would require continuing postal price increases to cover the rising cost structure of the remaining volume.

The underlying nature of the problem itself calls into question the viability of the current regulatory structure. The current structure is based on the notion that there are clear boundaries

separating most postal products from nearby products. The cornerstone of the policy is the presumption that there is no close competitive substitute or alternative delivery system for the major postal mail products, particularly First-Class Mail. Consequently, mail products constitute a natural regulated monopoly with very low elasticities of demand. Given the presumption that effective competition is infeasible, competitors can be kept out of the market with no loss to consumers. The surplus available from increasing economies-of-density can be used to pay for universal service. Finally, cost increases can be passed along through postage increases without fear of reducing volume.

In return for the regulated monopoly franchise, regulation makes it very difficult for the Postal Service to compete in new markets. First, price changes, new products, or even major changes in service need to go through a long regulatory approval process in which competitors are allowed to complain about unfair competition. Regulation prevents the type of rapid adjustments of price, product design, and service required in competitive markets. Second, regulation creates an environment in which the Postal Service is pushed toward pricing each product at what approaches its fully allocated cost. On the one hand, this guards against unfair cross-subsidization of competitive products. On the other hand, it prevents the Postal Service from adopting private sector pricing mechanisms in which products are priced based on relative demand price elasticities rather than on costs.

But if an alternate delivery system, entirely outside the reach of regulators, is already emerging in the Internet, the basic premise of the regulatory policy would be undercut. Competitors are already in the market. These competitors have an increasing ability to siphon-off volume from some of the most lucrative mail markets. If volume declines, the economies-of-density begin to unravel, generating higher costs that can be passed on in higher rates only at the cost of further volume losses. Finally, if competition has already arrived in postal markets, attempting to keep the Postal Service from competing effectively in other markets is no longer a credible regulatory strategy.

This is not intended to be a gloom and doom story. The Postal Service is not a dinosaur. The current regulatory system, however, might be. If deregulated, the Postal Service would have a

physical end-point delivery system that would be difficult for competitors to match. This system could generate additional volume if the Postal Service were free to compete across a wide array of mail products, introducing new products as opportunities arose. If free to use private sector pricing strategies rather than regulatory ones, the Postal Service could be a formidable competitor.

Deregulation of the Postal Service is no longer an abstract possibility. Regulatory reform proposals have been debated in House of Representative committees with increasing seriousness and specificity over the past several years. Deregulation of Post Offices has occurred in a number of countries. Although the United States has led the way in opening up previously regulated markets to competition, we have lagged in the case of postal reform. Two years ago, we wrote a paper on postal regulatory reform that recited a widely accepted fact that postal regulatory reform in the United States, although not imminent, will take place in the foreseeable future.⁸³ The discussion that follows immediately below draws heavily from that paper.

It is highly probable that the reform process for the Postal Service will look very much like the one embodied in H.R. 22, considered by the Congress during the 1999/2000 term. A new version of that bill has been proposed to the current Congress. H.R. 22 contained most of the modern innovations in deregulation that are likely to be contained in future efforts, including the price-cap model and provisions involving equal mark-ups, and structural separation between competitive and noncompetitive products.

H.R. 22-type reform divides the Postal Service's current products into competitive and noncompetitive categories. The competitive category includes Priority Mail, Express Mail, mailgrams, bulk parcel post and international mail (excluding single-piece international mail). These products, as noted above, represent only a tiny fraction of postal volume, but they have the potential

83. The paper was presented at the Eighth Conference on Postal Delivery Economics, an international conference sponsored by the Center for Research in Regulated Industries housed at the Rutgers Business School. It was the lead paper in the published proceedings, Michael L. Wachter, Barry T. Hirsch, and James W. Gillula, "Difficulties of Deregulation When Wage Costs are the Major Cost," in Michael A. Crew and Paul R. Kleindorfer, eds. *Future Directions in Postal Reform* (Boston: Kluwer Academic Publishers, 2001, Chapter 1).

to be growth markets. Also, Priority Mail is an important contributor to the recovery of institutional costs. The primary legislative concern is that the Postal Service set prices sufficient to cover institutional costs and the sum of attributable costs incurred by the Postal Service in providing specific products. An additional concern is that prices of competitive products might be set "too low" or below their attributable costs, thus representing cross-subsidization from noncompetitive products.

The noncompetitive category, which includes First-Class Mail and Standard mail among others, would face "price-cap" regulation. Here, the concern is that prices not be set "too high," thus allowing the cross-subsidization of the competitive products. Effectively, price increases in First-Class Mail would have to be at or below the rate of increase of the price index that makes up the price cap (for example, the consumer price index adjusted for some productivity factor). In the words of H.R. 22, the concept behind the price cap is that the deregulated firm should bear the burden of excess costs and operating margin shortfalls, while realizing the benefits from any cost controls or operating margin enhancements.

A second critical pricing element of H.R.22-type reforms involves the pricing of competitive products. H.R. 22 allowed the Postal Service to charge any rate for a competitive product subject to two minimum rate requirements. First, rates must cover the direct and indirect postal costs attributable to each competitive product, viewed individually. This is designed to prevent cross-subsidization which occurs when a regulated firm can use profits generated in protected markets to subsidize losses in competitive markets.

The second pricing provision is the equal mark-up provision. The H.R. 22 "equal markup" provision would prohibit the ratio of revenue to attributable costs for a competitive category as a whole from falling below the comparable ratio for the noncompetitive category. In other words, the equal mark-up provision prevents non-attributable institutional costs from being applied disproportionately to noncompetitive products that are price insensitive. This is designed to protect competitors by assuring that the revenue base obtained from noncompetitive products is not used disproportionately to fund the development of competitive products.

The difficulty with the pricing provisions is that the market sets the price of competitive products. As a general matter, a multi-product firm will set prices so that cost coverage differs across products, with lower markups for products with greater price elasticities. If the PRC were forced to violate this rule, the Postal Service would not be able to compete in the affected markets. In fact, the equal mark-up provision would place a greater burden on the Postal Service than does current Postal Rate Commission (PRC) practice.

An equal mark-up provision would be particularly costly to the Postal Service because of the existence of the compensation premium. The compensation premium means that postal labor costs will be higher than those paid by competitors. With an equal mark-up provision, the wage premium would be equally loaded into the competitive and noncompetitive products. Consequently, the Postal Service might find the price floor attached to its competitive products would be higher than the market price. If this were implemented, the result would place the Postal Service in a more disadvantageous position than is currently the case. One solution would be to give the PRC more discretion in apportioning costs across products in the pricing process.

Once set in motion by H.R. 22-type legislation, the dynamics of increased competition will carve out a path that will drive the deregulation process toward a more open, unregulated market. The stresses in postal markets will be considerable as the deregulation process unfolds. This will be greatly felt in the industrial relations system given the existence of a substantial, noncompetitive compensation premium.

Ultimately, deregulation is likely to be as complete as in telecommunications and transportation. As deregulation unfolds, the Postal Service will find itself competing with private sector firms that provide alternatives to the Postal Service's own processing and mail delivery systems. Many, if not most of these firms will be nonunion. Assuming material diversion of First-Class Mail to the Internet, the Postal Service will be forced into a cost reduction mode of operation to bring its institutional and operating costs into alignment with its revenue. In the end, the rents generated by the regulatory process that pay for the noncompetitive costs will disappear.

Accordingly, for the Postal Service to succeed in a more deregulated environment, it will need to have a competitive cost structure. As a consequence, the pressures of deregulation will be to significantly reduce the compensation premium. In addition, to be a viable competitor, the Postal Service will need to have the financial strength necessary to make the required investments in product, automation and other capital projects. Financial strength is a critical advantage in competitive markets. The current deficit and the possibility of further deficits if economies-of-density continue to unravel will be a sharply constraining factor. Changing the way the Postal Service does business, including making adjustments to its financial structure and industrial relations system, will take time. However, time is becoming a scarce commodity.